SOCIETY OF TOXICOLOGY
38th Annual Meeting

Special Events

All Events will be held at the Ernest N. Morial Convention Center (EMCC) unless otherwise listed.

SATURDAY, MARCH 13
1:30 PM - 5:30 PM
EMCC: Room 207
1999 Leadership Orientation Workshop for Committee Members
4:00 PM - 6:30 PM
EMCC: Room 211
Media Training Workshop for Toxicologists (Ticket Required)
4:00 PM
EMCC: First floor, near Exhibit Hall A
Registration Desk Opens
7:00 PM - 10:00 PM
Embassy Suites
Undergraduate Educational Program for Visiting Students
Opening Session

SUNDAY, MARCH 14
8:30 AM - 4:30 PM
EMCC: Room 220
Undergraduate Educational Program for Visiting Students
4:00 PM - 5:30 PM
EMCC: Room 217
Placement Service Seminar: Mid-Course Corrections: Changing Careers in Toxicology
5:00 PM - 6:30 PM
EMCC: La Louisiane Ballroom
Welcome Reception
6:30 PM - 7:30 PM
EMCC: Room 208
25-Year Member Reception
7:00 PM - 9:00 PM
Hilton New Orleans Riverside Hotel
Student and Postdoctoral Fellow Reception

MONDAY, MARCH 15
7:30 AM - 5:00 PM
EMCC: Room 213
K-12 Teachers Workshop: Paracelsus Goes to the K-12 Classroom
8:30 AM - 9:30 AM
EMCC: La Louisiane Ballroom
Plenary Lecture: Worlds Apart, Lecturer: Dr. Rick Chappell, Vanderbilt University
9:30 AM - 11:30 AM
EMCC: Exhibit Hall A
Poster Session for Visiting Students
12:00 NOON - 1:15 PM
EMCC: La Louisiane Ballroom
MRC Lecture: Integrating Genes to Physiology: A Bioengineering Perspective, Lecturer: Dr. Douglas A. Lauffenburger, MIT
4:30 PM - 6:00 PM
Hilton New Orleans Riverside Hotel
Specialty Section Presidents' Meeting
7:00 PM - 9:00 PM
Hilton New Orleans Riverside Hotel
Specialty Section Meetings: Carcinogenesis, Inhalation, Metals, Neurotoxicology, Regulatory and Safety Evaluation, and Risk Assessment

TUESDAY, MARCH 16
7:00 AM - 8:00 AM
Hilton New Orleans Riverside Hotel
Regional Chapters Presidents' Meeting
8:00 AM - 8:30 AM
EMCC: Rooms R06 - R08
Burroughs Wellcome Toxicology Scholar Award Lecture: Lessons Learned From Studying Toxicant-Induced Irreversible Testicular Injury, Lecturer: Dr. Kim Boekelheide, Brown University
12:00 NOON - 1:00 PM
EMCC: La Louisiane Ballroom
Graduate Student Luncheon
12:00 NOON - 1:15 PM
EMCC: Rooms 208 - 210
SOT/EUROTOX Debate: The Results of Mechanistic Toxicity Studies Should Supersede Ambiguous Epidemiological Data
1:30 PM - 5:00 PM
EMCC: Room 214
An Introduction to Grantsmanship Forum
4:30 PM - 6:00 PM
EMCC: Room 211
Annual Business Meeting (SOT Members Only)
6:00 PM - 7:30 PM
Hilton New Orleans Riverside Hotel
Specialty Section Meetings: Food Safety, In Vitro, Molecular Biology, Reproductive and Developmental, and Comparative and Veterinary
6:30 PM - 8:00 PM
Hilton New Orleans Riverside Hotel
Regional Chapter Meetings (See Calendar for exact times and locations.)

WEDNESDAY, MARCH 17
8:00 AM - 8:30 AM
EMCC: Rooms R06 - R08
Burroughs Wellcome Toxicology Scholar Award Lecture: How Copper Ions Signal to the Transcriptional Machinery, Lecturer: Dr. Dennis J. Thiele, University of Michigan
4:30 PM - 5:30 PM
EMCC: Room 220
SOT Council Meeting with Graduate Students/Post-Doctoral Fellows
6:00 PM - 7:30 PM
Hilton New Orleans Riverside Hotel
Specialty Section Meetings: Epidemiology, Immunotoxicology, Mechanisms, and Occupational Health
6:30 PM - 8:00 PM
Hilton New Orleans Riverside Hotel
Regional Chapter Meetings (See Calendar for exact times and locations.)

THURSDAY, MARCH 18
8:30 AM - 12:00 NOON
EMCC: Room R01
Special Workshop Session: International Union of Toxicology-Sponsored Workshop
8:30 AM - 11:30 AM
EMCC: Room 207
Late-Breaking Research in Toxicological Sciences
12:00 NOON - 1:30 PM
EMCC: Rooms R02 - R03
Issues Session: An Additional Ten-Fold Safety Factor for Children: Is This Needed?
5:00 PM - 6:00 PM
EMCC: La Louisiane Ballroom
Final Night Awards Presentation
6:00 PM - 8:00 PM (following the Awards Presentation)
EMCC: La Louisiane Ballroom
Final Night Reception

FRIDAY, MARCH 19 AND SATURDAY, MARCH 20
8:30 AM - 8:00 PM
Hotel Monteleone
Satellite Meeting: Safety Evaluation of Drugs for Central Nervous System Delivery
1999 Annual Meeting Sponsors

Platinum

Burroughs Wellcome
Pharmacia & Upjohn
Pfizer, Inc.
National Institutes of Health

Gold

Ani Lytics, Inc. • Arco Chemical Company
Charles River Laboratories • Eastman Kodak Company
E.I. Du Pont De Nemours and Company • Harlan Sprague Dawley/Harlan Teklab
• Johnson & Johnson • Rhône-Poulenc Rorer Pharmaceuticals Research
• R. W. Johnson Pharmaceuticals Research Institute
• Sanofi Pharmaceuticals, Inc. • Searle

Silver

Battelle • Hoffmann-La Roche, Inc. • E.P.I.
• Exxon Biomedical Sciences • Philip Morris • Quintiles Preclinical
• Therimmune Research/R.O.W. Labs Corporation
• Wyeth-Ayerst Research

Platinum sponsors contributed $5,000 or more.
Gold sponsors contributed between $2,000 and $4,999.
Silver sponsors contributed between $1,000 and $1,999.
# Society of Toxicology
## 38th Annual Meeting

### Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Overview</td>
<td>2</td>
</tr>
<tr>
<td>Ernest N. Morial Convention Center Maps</td>
<td>4</td>
</tr>
<tr>
<td>General Information</td>
<td>6</td>
</tr>
<tr>
<td>Hotel Accommodations</td>
<td>13</td>
</tr>
<tr>
<td>1999 Exhibitors</td>
<td>14</td>
</tr>
<tr>
<td>Program Summary</td>
<td>17</td>
</tr>
<tr>
<td>Continuing Education Courses</td>
<td>21</td>
</tr>
<tr>
<td>Program Descriptions</td>
<td>27</td>
</tr>
<tr>
<td>Corporate Associate Members</td>
<td>191</td>
</tr>
<tr>
<td>Society of Toxicology Officers, Councilors, Annual Meeting Staff</td>
<td>192</td>
</tr>
<tr>
<td>Past Presidents</td>
<td>192</td>
</tr>
<tr>
<td>Honorary Members</td>
<td>192</td>
</tr>
<tr>
<td>Elected and Appointed Committees</td>
<td>193</td>
</tr>
<tr>
<td>Officers – Specialty Sections</td>
<td>196</td>
</tr>
<tr>
<td>Officers – Regional Chapters</td>
<td>197</td>
</tr>
<tr>
<td>Media Resource Specialists</td>
<td>198</td>
</tr>
<tr>
<td>Society of Toxicology Awards</td>
<td>201</td>
</tr>
<tr>
<td>Sponsored Awards</td>
<td>204</td>
</tr>
<tr>
<td>Author Index</td>
<td>207</td>
</tr>
<tr>
<td>SOT Membership Application Packet</td>
<td>Appendix</td>
</tr>
<tr>
<td>SUNDAY, MARCH 14</td>
<td>MONDAY, MARCH 15</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>CONTINUING EDUCATION</strong>&lt;br&gt;SUNRISE MINI-COURSE</td>
<td><strong>PLENARY LECTURE</strong>&lt;br&gt;8:30 AM&lt;br&gt;Dr. Rick Chappell, Vanderbilt University</td>
</tr>
<tr>
<td>7:00 AM - 8:00 AM</td>
<td><strong>INNOVATIONS IN APPLIED TOXICOLOGY</strong>&lt;br&gt;9:30 AM&lt;br&gt;Genomic Technologies and New Screening Strategies for Toxicology</td>
</tr>
<tr>
<td>Basic Bioinformatics: From Sequence Analysis to Genome Analysis</td>
<td><strong>SYMPOSIUM</strong>&lt;br&gt;9:30 AM&lt;br&gt;Cell Cycle Check-Points and Chemical-Induced Stress Response: Survival Versus Death</td>
</tr>
<tr>
<td><strong>CONTINUING EDUCATION MORNING COURSES</strong>&lt;br&gt;8:00 AM - 12:00 NOON</td>
<td>1:30 PM&lt;br&gt;Molecular and Cellular Mechanisms of Antioxidant Action&lt;br&gt;Biotechnology Products: Novel Compounds and Testing Strategies</td>
</tr>
<tr>
<td>1. Evaluation of Male Reproductive Toxicity: Sperm Markers and Epididymal Mechanisms of Toxicity</td>
<td><strong>WORKSHOPS</strong>&lt;br&gt;9:30 AM&lt;br&gt;Cognitive Tests: Interpretation for Neurotoxicity? Relationships Between Biopsychosocial, In Vitro Dissolution Rate, and Fiber Toxicity</td>
</tr>
<tr>
<td>2. Application of Transgenic Models in Toxicology</td>
<td>1:30 PM&lt;br&gt;Validation of Toxicology Test Methods: Immunotoxicology Case Studies&lt;br&gt;Animal Models of Cardiopulmonary Disease: Impact of Air Pollution on At Risk Populations</td>
</tr>
<tr>
<td>3. Gene Regulation by Reactive Oxygen Species</td>
<td><strong>MRC LECTURE</strong>&lt;br&gt;12:00 NOON&lt;br&gt;Dr. Douglas A. Lauffeburger, MIT</td>
</tr>
<tr>
<td>4. <em>In Vitro</em> Methods for Evaluating Bioinorganic Parameters for Risk Assessment</td>
<td><strong>PLATFORM SESSIONS</strong>&lt;br&gt;9:30 AM&lt;br&gt;Immunotoxicity: Modulation of T Cell Responses and Host Resistance&lt;br&gt;1:30 PM&lt;br&gt;Estrogens and Male Reproductive System Development&lt;br&gt;Lead Bioavailability, Developmental Toxicity and Public Health</td>
</tr>
<tr>
<td>5. Advanced Metal Toxicology</td>
<td><strong>POSTER SESSIONS</strong>&lt;br&gt;9:30 AM&lt;br&gt;Reactive Intermediates&lt;br&gt;Polyaromatic Hydrocarbons Developmental Toxicology 1&lt;br&gt;Mixtures&lt;br&gt;Kidney&lt;br&gt;Natural Products&lt;br&gt;Hematopoietic System&lt;br&gt;1:30 PM&lt;br&gt;Inflammation&lt;br&gt;Food Safety&lt;br&gt;TCDD, Ah Receptor and ARNT&lt;br&gt;<em>In Vitro</em>: Methods and Toxicity&lt;br&gt;Skin&lt;br&gt;Risk Assessment 1&lt;br&gt;Apoptosis 1&lt;br&gt;Cytochrome P450 1&lt;br&gt;Neurotoxicity of Pesticides</td>
</tr>
</tbody>
</table>
**WEDNESDAY, MARCH 17**

**BURROUGHS WELLCOME SCHOLAR AWARD LECTURE**
8:00 AM  
Dr. Dennis Thiele, University of Michigan

**SYMPOSIA**

8:30 AM  
The Role of Quinones in Toxicology
8:45 AM  
Biologic Markers in Molecular Epidemiology
1:30 PM  
Aliphatic Ethers as Fuel Oxidantes: Health Effects and Regulatory Issues
The Role of DNA Repair in Maintenance of Genome Stability
Chemical Modifiers of Response to Food-Borne Microbial Pathogens

**WORKSHOPS**

8:30 AM  
Toxicology for Kids: A How-To-Guide for Toxicologists
The Immunotoxicology of Novel Therapeutics

1:30 PM  
Environmental Justice: Socioeconomic Inequities and Populations at Risk

**ROUND TABLES**

12:00 NOON  
The Challenges of Using Common Mechanisms of Toxicity in Chemical Regulation
A Partnership Approach to the Evaluation of Alternative Models for Carcinogenicity Testing

**PLATFORM SESSIONS**

8:30 AM  
Pesticides
1:30 PM  
TCDD

**POSTER DISCUSSION SESSIONS**

8:30 AM  
Transgenic Animals: Carcinogenicity Testing and Mechanisms
TNF-a and Other Cytokines as Mediators of Hepatotoxicity
Airborne Particulate Matter: In Vivo Toxicity
1:30 PM  
Mitochondria in Apoptosis
Airborne Particulate Matter: In Vivo Toxicity

**POSTER SESSIONS**

9:30 AM  
Environmental/Exotoxicology
Endocrine Toxicity
Genomics/Gene Expression
Halogenated Hydrocarbons
Cell Proliferation and Cell Cycle
Neurotoxicology of Non-metals
Metallothionein
CV System
1:30 PM  
Hypersensitivity
Safety Evaluation
Metal Toxicology - Lead, Mercury, Chromium and Others
Eye
Regulatory/Policy
Carcinogenesis II
Metals - Arsenic and Cadmium
Behavioral Neurotoxicology

**THURSDAY, MARCH 18**

**INNOVATIONS IN TOXICOLOGICAL SCIENCES**

8:00 AM  
Cytokines: Biology, Gene Regulation and Role in the Pathogenesis of Lung Disease

**SYMPOSIA**

8:30 AM  
Metals and Disorders of Cell Accumulation: Modulation of Apoptosis and Cell Proliferation
Xenobiotic Effects on Cell Adhesion Molecules and Extracellular Matrix Interactions
1:30 PM  
Endogenous Estrogens as Carcinogens: Metabolic Activation Through Oxidative Metabolism
Reactive Oxygen and Nitrogen Species: Cell Activation, Injury, and Apoptosis

**WORKSHOPS**

1:30 PM  
Endocrine Disruption and Neurotoxicity: Why Toxicologists Should Be Concerned About the Actions of Estrogenic Chemicals in the CNS

**SYMPOSIA**

8:30 AM  

**ISSUES SESSION**

12:00 NOON  
An Additional Ten-Fold Safety Factor for Children: Is This Needed?

**POSTER DISCUSSION SESSIONS**

8:30 AM  
Alternative Models for Mutagenicity and Carcinogenicity Testing
1:30 PM  
Respiratory Hypersensitivity

**POSTER SESSIONS**

8:30 AM  
Methods
Screening for Endocrine-Mediated Toxicity
Reproductive Toxicology
Glutathione
Risk Assessment II
Toxicology Database and Communication
Cytochrome P450 II

**LATE-BREAKING RESEARCH IN TOXICOLOGICAL SCIENCES**

8:30 AM  
Check information on-site.

**SPECIAL EVENTS SPONSORED BY THE SOCIETY OF TOXICOLOGY**

**SATURDAY, MARCH 13**

1:30 PM  
Leadership Workshop
4:00 PM  
Media Training Workshop
4:00 PM  
Registration Desk Opens
7:00 PM  
Undergraduate Educational Program for Visiting Students Opening Session

**SUNDAY, MARCH 14**

9:30 AM  
Undergraduate Educational Program for Visiting Students
4:00 PM  
Placement Service Seminar
6:00 PM  
Welcoming Reception
6:30 PM  
25-Year Member Reception
7:00 PM  
Student and Postdoctoral Fellow Reception

**MONDAY, MARCH 15**

7:30 AM  
K-12 Teachers Workshop
8:30 AM  
Plenary Lecture: Dr. Rick Chappell, Vanderbilt University
9:30 AM  
Poster Session for Undergraduate Visiting Students
12:00 NOON  
MRC Lecture: Dr. Douglas A. Lauffenburger, MIT
4:30 PM  
Specialty Section Presidents’ Meeting
6:00 PM  
Specialty Section Meetings: Carcinogenesis, Inhalation, Metals, Neurotoxicology, Regulatory and Safety Evaluation, and Risk Assessment

**TUESDAY, MARCH 16**

7:00 AM  
Regional Chapters Presidents’ Meeting
8:00 AM  
Burroughs Wellcome Scholar Award Lecture: Dr. Kim Bokelheide, Brown University
12:00 NOON  
Graduate Student Luncheon
12:00 NOON  
SOT/BUROTOX Debate: The Results of Mechanistic Toxicity Studies Should Supersede Ambiguous Epidemiological Data
1:30 PM  
Forum on Grantsmanship
4:30 PM  
Annual Business Meeting
6:00 PM  
Specialty Section Meetings: Food Safety, In Vitro, Molecular Biology, Reproductive and Developmental, and Comparative and Veterinary
6:30 PM  
Regional Chapter Meetings

**WEDNESDAY, MARCH 17**

**8:00 AM**
Burroughs Wellcome Scholar Award Lecture: Dr. Dennis J. Thiele, University of Michigan

**4:30 PM**
SOT Council Meeting with Graduate Students/Post-Doctoral Fellows

**6:00 PM**
Specialty Section Meetings: Epidemiology, Immunotoxicology, Mechanisms, and Occupational Health

**6:30 PM**
Regional Chapter Meetings

**THURSDAY, MARCH 18**

5:00 PM  
Final Night Awards Presentation
6:00 PM  
Final Night Reception
Society of Toxicology
38th Annual Meeting

General Information

Scientific Sessions and Special Events will be held at the
Ernest N. Morial Convention Center (EMCC) unless otherwise listed.

Registration Fees:

<table>
<thead>
<tr>
<th>Category</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOT Member</td>
<td>$235</td>
</tr>
<tr>
<td>Non-Member</td>
<td>$380</td>
</tr>
<tr>
<td>SOT Retired Member</td>
<td>$115</td>
</tr>
<tr>
<td>Post-Doctoral</td>
<td>$135</td>
</tr>
<tr>
<td>Graduate or Undergraduate Student</td>
<td>$115</td>
</tr>
<tr>
<td>SOT Corporate Member</td>
<td>$0</td>
</tr>
<tr>
<td>Press</td>
<td>$0</td>
</tr>
<tr>
<td>Guest (non-scientists: see page 8, “Hospitality Center”)</td>
<td>$40</td>
</tr>
</tbody>
</table>

Continuing Education Courses:

(AM and PM Classes run concurrently)

<table>
<thead>
<tr>
<th>Category</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOT Member/Corporate/Retired</td>
<td>$135</td>
</tr>
<tr>
<td>Non-Member</td>
<td>$210</td>
</tr>
<tr>
<td>Post-Doctoral</td>
<td>$115</td>
</tr>
<tr>
<td>Graduate or Undergraduate Student</td>
<td>$80</td>
</tr>
<tr>
<td>Press</td>
<td>$0</td>
</tr>
</tbody>
</table>

Registration Desk —
Ernest N. Morial Convention Center

Saturday, March 13 ............. 4:00 PM – 7:00 PM
Sunday, March 14 .............. 7:00 AM – 5:00 PM
Monday, March 15 ............... 7:00 AM – 5:00 PM
Tuesday, March 16 ............ 8:00 AM – 4:00 PM
Wednesday, March 17 .......... 8:00 AM – 4:00 PM
Thursday, March 18 ....... 8:00 AM – 12:00 NOON

Registration Materials

When you arrive at the Ernest N. Morial Convention Center, please go
to the registration area located near Exhibit Hall A on the first floor to
pick-up your registration materials: Annual Meeting Calendar,
Awards Brochure, badge holder, Evaluation Form, Exhibitor
Directory and other supplemental materials (there will be packets con-
taining these materials throughout the registration area).

Receipt of the Program and
The Toxicologist

1. SOT members in the U.S. and Canada will receive the Program
and The Toxicologist (abstracts volume) prior to the meeting, as
will U.S. and Canadian non-members who pre-register by January
11, 1999.

2. SOT members and non-member pre-registrants outside the U.S.
and Canada, as well as non-members in the U.S. who register
after January 11, will receive the Program and The Toxicologist at
the registration desk on-site.

3. SOT members outside of the U.S. and Canada who do not attend
the meeting will receive their copies of the Program and The
Toxicologist after the meeting.

NOTE: Please bring your copy of the Program and The Toxicologist
with you to the meeting.

Program Disk on the Internet!

The SOT 1999 Annual Meeting Disk Program will be available on the
SOT Web site (www.toxicology.org) in early February, at no charge.
This program will be in the familiar IBM format. The Meeting
Diskette Search Program provides the ability to search the abstract
titles of papers and posters programmed for presentation at the Annual
Meeting. Users can search the meeting program by key words and
phrases, author names and sessions. By printing your selections, you
can create your own personal itinerary for the meeting.

Air Transportation

The New Orleans International Airport
is the nearest airport serving downtown New Orleans and transportation
to all convention hotels is provided by shuttle or taxi service. Shuttle desks
are located in the baggage claim area.
Visit LEE TRAVEL's Web site
(www.leetravel.com/sot99) for more information. Attendees who use
either LEE TRAVEL or the special airline reference numbers when making
their reservations will receive airfare discounts.
Reference Numbers

Special airline discount reference numbers are assigned to SOT. Please be sure to use them when making your reservations.

Delta Airlines ........................................ 116690A
United Airlines ...................................... 526FI

Help SOT help you. By your use of the reference numbers, SOT receives credit from the airlines. These credits are used to help offset the travel costs of invited speakers and allow SOT to keep registration fees economical.

Complimentary Airline Ticket Drawing

Attendees who purchase their tickets through Delta or United Airlines and use SOT’s reference numbers will automatically be entered into a special drawing for ONE COMPLIMENTARY ROUND-TRIP TICKET on Delta. The ticket is valid to anywhere in the continental U.S. for up to 12 months after the Annual Meeting; the recipient is responsible for tax and processing fees. LEE TRAVEL will be glad to verify that you are entered in the drawing — stop by their travel desk in the registration area of the Ernest N. Morial Convention Center.

U.S., Canadian and Puerto Rico Travel Discounts

SOT has arranged special discounted rates with Delta and United Airlines for travel originating in the U.S., Canada and Puerto Rico. These rates provide savings of 5 percent off the lowest applicable fare or 10 percent off a full coach fare. By staying over a Saturday night, you can take advantage of additional savings. LEE TRAVEL also offers great savings on discounted fares that do not require a Saturday night stayover.

International Attendees

You can qualify for ONE COMPLIMENTARY ROUND-TRIP TICKET DRAWING by using the SOT reference numbers when you purchase your ticket(s). Send the SOT Travel Form to LEE TRAVEL and they will make your SOT air travel reservations.

Military/Government Tickets

Special airline discounts may apply for travel and will qualify you for ONE COMPLIMENTARY ROUND-TRIP TICKET DRAWING by using the SOT reference numbers when you purchase your military/government ticket(s). Send the SOT Travel Form to LEE TRAVEL and they will make your SOT air travel reservations.

Ground Transportation

Shuttle Bus

Shuttle bus service is provided from the New Orleans International Airport to all SOT designated hotels in the New Orleans area with rates starting from $10 one way. Shuttles are located in the far end of the baggage claim area of New Orleans International Airport. For more information, call LEE TRAVEL at (800) 298-5338.

Taxi

The taxi fare from New Orleans International Airport to the New Orleans convention hotels is approximately $30 and prearranged limo service is approximately $70.

Car Rental

Do you need a rental car during the SOT Annual Meeting in New Orleans? To receive SOT’s special meeting rate for SOT Members and Non-Members, please call AVIS at (800) 331-1600. Use Discount # T534999.

Travel Desk

EMCC: Registration Area

For travel information during the Annual Meeting, please stop by the LEE TRAVEL desk located in the registration area of the Ernest N. Morial Convention Center. The travel desk will be open Monday through Thursday during SOT’s registration hours, and its personnel will be happy to help you or verify your ONE COMPLIMENTARY ROUND-TRIP TICKET DRAWING entry.

Hotels

The SOT-New Orleans Housing Bureau deadline was Friday, February 5, 1999.

If you have not made your housing reservations or have questions regarding your reservation, please call the SOT-New Orleans Housing Bureau at (800) 672-6124.

The Hilton New Orleans Riverside and the Sheraton Hotels are the co-Headquarters for SOT.

The scientific sessions and exhibits are located at the Ernest N. Morial Convention Center.
Hospitality Suites and Affiliate Meetings

All requests for hospitality suites and affiliate meetings must be approved by SOT Headquarters. To reserve a meeting room, please submit an Ancillary Meeting Application. For a suite, contact Patricia Strong at (703) 438-3115, ext. 311. Suites and meeting rooms will be assigned on a first-come, first-served basis. Hospitality suites and meeting rooms at all the hotels will be available to registered exhibitors and SOT Corporate Associate members only. No hospitality functions may be scheduled during the scientific sessions, Annual Business Meeting, Final Night Awards Presentation, or Final Night Reception.

Hospitality Center

Hilton New Orleans Riverside Hotel

The SOT Guest Hospitality Center provides guest participants (non-scientists) with a place to meet and socialize with other guests. The Center will be located at the Hilton New Orleans Riverside Hotel, staffed Sunday through Thursday from 8:30 AM - 4:00 PM, and information on local attractions and tours will be available there.

Guests must be registered for the Annual Meeting to access the Hospitality Center. (Guests are welcome to attend the Welcoming and Final Night receptions but WILL NOT have access to the scientific sessions or the Exhibit Hall.)

Disabled Access

The Ernest N. Morial Convention Center and most of the SOT hotels are accessible to persons with special needs. If you require more information about disabled access prior to the meeting, please call SOT Headquarters at (703) 438-3115, ext. 311; On-site: contact the SOT Headquarters office at the Ernest N. Morial Convention Center.

Message Center/Lodging Information Desk

EMCC: Registration Area

The SOT Message Center/Lodging Information Desk will be located in the registration area of the Ernest N. Morial Convention Center and open during registration hours, Saturday – Thursday. Please inform your office and family of the Message Center/Lodging Information Desk number: (504) 670-5200. (The Message Center/Lodging Information Desk will not accept facsimiles.)

Annual Meeting Attendee lodging information will be available at the Message Center/Lodging Information Desk. The lodging list will be based on hotel information as of one week prior to the meeting. If you do not wish to have your lodging information made available to others, please visit the Message Center/Lodging Information Desk and have your name removed from the listing.

Convention Center First Aid and Security

If an emergency occurs at the Ernest N. Morial Convention Center, proceed to the nearest phone, dial 0 and ask the operator to connect you to security. State the telephone number and area from which you are calling as well as the nature and location of the incident. The Emergency Medical Team will arrive within minutes.

The First Aid Station is located near Exhibit Hall B.

Should the fire alarm sound in the Ernest N. Morial Convention Center, please exit the building in an orderly manner through the first and second floor exits.

Social Events

Welcoming Reception

Sunday, March 14, 5:00 PM – 6:30 PM
EMCC: La Louisiane Ballroom

Greet your colleagues and plan your itinerary at the Welcoming Reception, which will be held at the Ernest N. Morial Convention Center. Enjoy light snacks and complimentary sodas provided by SOT and sponsors — cash bars will also be available.

25-Year Member Reception

Sunday, March 14, 6:30 PM – 7:30 PM
EMCC: Room 208

Have you been a member of the Society for 25 years (or perhaps many more)? If so, you will be recognized as a group at the SOT 1999 Annual Meeting in New Orleans, Louisiana.

Please consider joining us at the Annual Meeting so we can extend our gratitude for the solid foundation on which the Society has grown.
Student & Postdoctoral Fellow Reception
Sunday, March 14, 7:00 PM – 11:00 PM
Hilton New Orleans Riverside Hotel
The Society of Toxicology strives each year to improve its Annual Meeting and accomplishes this part by talking with attendees and listening to their suggestions. Last year, it was suggested that a forum be provided so that students and postdoctoral fellows could meet and talk informally with one another about graduate and postdoctoral programs. Therefore, the Society will be offering a reception for these individuals immediately following the Welcoming Reception. SOT will provide a pasta buffet and DJ. Meeting badges are required.

Socratic Dinners
Monday – Wednesday, March 15 – 17, 7:30 PM
Hilton New Orleans Riverside Hotel
To enable you to enjoy the wide variety of culinary delights of New Orleans while having lively discussion on focused subjects, SOT has arranged a series of Socratic Dinners at the SOT Annual Meeting in New Orleans. Subjects will include: apoptosis, cell cycle, DNA repair, oxidative stress, genetically engineered plants, metals, susceptibility genes, signal transduction, reactive intermediates. Easels listing the subject area, time, date, and the restaurant, along with 10 blanks for participant names will be located in the Registration Area of the Convention Center. Registration will be on a first-come, first-served basis. Participants will meet in the first floor lobby of the Hilton Riverside Hotel 15 minutes prior to dinner and will walk as a group to the restaurant. The discussions will not be facilitated and each individual will have his or her own bill for dinner. Share your ideas with colleagues who share your interests.

Final Night Reception
Thursday, March 18, 6:00 PM – 8:00 PM
EMCC: La Louisiane Ballroom
Take advantage of the Final Night Reception to socialize and network with your colleagues. Participate in the festivities or sit back, relax and partake in the refreshments. This reception will be held at the Ernest N. Morial Convention Center and is free to all attendees.

Final Night Awards Presentation
Thursday, March 18, 5:00 PM – 6:00 PM
EMCC: La Louisiane Ballroom
At 5:00 PM, in the Ernest N. Morial Convention Center, the Society of Toxicology will honor the following 1999 Award Recipients:

<table>
<thead>
<tr>
<th>Award</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Michel Charbonneau</td>
</tr>
<tr>
<td>Colgate-Palmolive Visiting Professorship</td>
<td>. San Diego State University, Graduate School of Public Health</td>
</tr>
<tr>
<td>. Visiting Professor: Robert Chapin</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Jules Brodeur</td>
</tr>
<tr>
<td>Merit</td>
<td>Thomas Clarkson</td>
</tr>
<tr>
<td>Public Communications Award</td>
<td>Ann de Peyster</td>
</tr>
<tr>
<td>Zeneca Travelling Award Lectureships</td>
<td>Alvaro Puga</td>
</tr>
</tbody>
</table>

Board of Publications Best Paper Awards in:

Fundamental and Applied Toxicology and Toxicological Sciences


- C. A. Franklin
- M. J. Inskip
- C. L. Baccanale
- C. M. Edwards
- W. I. Manton
- E. Edwards
- E. J. O’Flaherty

Toxicology and Applied Pharmacology


- S. K. Ramaiah
- M. G. Soni
- T. J. Bucci
- H. M. Mehendale


- C. L. Zuch
- D. J. O’Mara
- D. A. Cory-Slechta
SOT Headquarters Office

EMCC: Registration Area

Saturday, March 13 .................................. 4:00 PM – 7:00 PM
Sunday, March 14 ................................. 7:00 AM – 5:00 PM
Monday, March 15 .................................. 7:00 AM – 5:00 PM
Tuesday, March 16 ................................. 8:00 AM – 4:00 PM
Wednesday, March 17 ............................. 8:00 AM – 4:00 PM
Thursday, March 18 ............................... 8:00 AM – 12:00 NOON

SOT T-Shirts

$8 each

EMCC: Registration Area

SOT T-Shirts will be available for sale at the Sales Booth in the Registration Area of the Ernest N. Morial Convention Center (during registration hours) at a cost of $8 per shirt.

Speaker Slide Preview Room

EMCC: Room 203

Saturday, March 13 .................................. 2:00 PM – 4:00 PM
Sunday – Thursday, March 14 – 18 ............. 7:00 AM – 4:00 PM

SOT Office/Media Center

EMCC: Room 202

Sunday – Wednesday, March 14 – 17 .......... 8:00 AM – 5:00 PM
Thursday, March 18 ............................... 8:00 AM – 4:00 PM

Media Training Workshop for Toxicologists

By Kalish Communications of Washington, DC

Saturday, March 13, 4:00 PM – 6:30 PM
EMCC: Room 211

Learn to control the message and the media! This workshop is lively, fun, creative, challenging and loaded with critical information. This seminar is for beginning and advanced media savvy toxicologists.

Registration is free for SOT Media Resource Specialists and $50 for all others. The Media Training Workshop will be held at the Ernest N. Morial Convention Center.

All attendees will receive a free reference guide.

Media Representative Registration/Media Center

EMCC: Rooms 201 – 202

Registration fees are waived for working reporters and public information officers. Proof of credentials is required. Accepted credentials include a recognized press card, business card, or letter on official letterhead from an editor of a publication or a producer of a program certifying that you are covering the conference for their respective organizations.

The Media Center will be on the 2nd floor, Rooms 201 – 202 of the Ernest N. Morial Convention Center. It will include news briefings, and a workroom equipped with Internet access, computers, telephones and a fax machine.

Hours of operation are:

Sunday – Wednesday, March 14 – 17 ........... 8:00 AM – 5:00 PM
Thursday, March 18 ............................... 8:00 AM – 12:00 NOON

For more information, contact Deborah Hyman, Public Affairs Director, at SOT Headquarters: (703) 438-3115, ext. 327 or E-mail: deborahh@toxicology.org.

Placement Services

EMCC: Room 225

Job placement just became easier! SOT's on-line job bank makes it easier for candidates and employers alike to access this service from the SOT Web site (www.toxicology.org). Registrations are continuously processed and valid for six months. Once registered, users may search or browse the listings of available jobs or candidates. During the registration period, users can update their listings or search the database as often as they wish. Communication with a desired employer or candidate can even be made via e-mail messages created within the system.
General Information

In addition to the on-line service, the traditional Placement Service program will be functional at the Annual Meeting. Although pre-registration is encouraged, registrations will be accepted at the Annual Meeting. All users with current registrations at the time of the Annual Meeting will be allowed to use the service.

Sunday ............................. 10:00 AM – 3:30 PM  
Monday ................................ 7:30 AM – 7:00 PM  
Tuesday – Wednesday .......... 7:30 AM – 5:30 PM

The Placement Message Center will be open Monday through Thursday. The Placement Service will not arrange interviews; however, interview cubicles will be available. Visit the Placement Service to receive a brochure describing the on-line service.

Membership Services

Saturday, March 13 – Thursday, March 18  
EMCC: Registration Area, First Floor

The SOT Membership Committee has put together a booth highlighting the benefits of membership in SOT. Applications for SOT membership will be available. Non-members attending this year's meeting are invited to visit the booth in the registration area. Student members who are eligible for Associate membership and Associate members who are eligible for Full membership are also encouraged to visit the booth and pick up an application form. The deadlines for receipt of applications are January 1, May 1, and September 1.

Sponsorship Opportunities

Sponsorship opportunities are available for the 1999 Annual Meeting. Your sponsorship serves as visible evidence of your organization's commitment to the science of toxicology. In addition, your sponsorship provides an opportunity for you to increase the overall awareness of your company by SOT members and over 5,000 Annual Meeting attendees. There are four levels of sponsorship available: platinum (over $5,000), gold ($2,000 – $4,999), silver ($1,000 – $1,999) and contributor ($500 – $999). Acknowledgement signs will group sponsors by level of giving and will be displayed at the following functions: Minority Student Program—Evening Social, Educational Program Refreshments, Educational Poster Session Refreshments; Graduate Student Luncheon; Graduate Student Social; K-12 Teachers Program Luncheon; Media Training Workshop; Media Training Reception; Continuing Education Course Refreshments; Welcoming Reception; and, Final Night Reception. In addition, sponsors will be recognized in the Final Program, the Toxicologist, the pre- and post-meeting newsletter and in the meeting registration materials.

Brown Bag Lunch

Monday – Wednesday, March 15 – 17,  
12:00 NOON – 1:00 PM

The Brown Bag Lunch Area is noted on the Exhibit Hall floor plan located on page 4.

Attendees:

Make the most of your lunch break and join speakers from the morning symposium and workshop sessions in the Exhibit Hall to discuss their presentations. These Brown Bag Lunches are designed to allow you to spend time with the speakers according to your lunch time availability. Grab a lunch from the concession area and join one, two or all of the speakers to obtain more in-depth answers to your questions. Detailed information regarding who will be available will be posted on-site in the Exhibit Hall.

SOT appreciates the speakers taking time to join SOT meeting attendees for lunch. We hope all attendees will take advantage of this valuable opportunity.

Exhibit Space

For many of the science professionals who attend, the focus of the SOT Annual Meeting is the three-day SOT exhibition. Here, state-of-the-art products and services directly relating to the advancement of research within toxicology and associated areas are displayed.

At the SOT exhibition, scientists have a firsthand opportunity to talk with the exhibitors, examine and learn about the products and services on display by more than 240 companies. To request a booth at the SOT exhibition, contact Clarissa Russell Wilson at SOT Headquarters at (703) 438-3115, ext. 326 or E-mail: clarissa@toxicology.org. (Space is limited and selling quickly.)

Complimentary coffee will be provided in the Exhibit Hall from 9:30 AM to 10:30 AM, Monday through Wednesday.

Exhibitors:

Do not miss this opportunity to increase your company’s exposure during the SOT Annual Meeting and throughout the year. Display your company’s ad in the SOT Exhibitor Directory which serves as a constant source of information throughout the conference and the year. For more details on advertising opportunities, contact Clarissa Russell Wilson at (703) 438-3115, ext. 326 or E-mail: clarissa@toxicology.org.
Reminder:
The SOT exhibits are considered to be part of the Annual Meeting scientific sessions. Guests and children are not allowed to participate. The Society requires approval of all photographic equipment used in the Exhibit Hall. For information or approval, contact Clarissa Russell Wilson at (703) 438-3115 ext. 326 or E-mail: clarissa@toxicology.org.

Complimentary Coffee in Exhibit Hall

Complimentary coffee sponsored by the exhibitors and SOT will be provided in the Exhibit Hall from 9:30 AM to 10:30 AM, Monday through Wednesday.

Food Service in Exhibit Hall

Coffee, juices and quick-serve continental breakfast items will be available for purchase from 8:00 AM to 10:00 AM and luncheon items will be available for purchase from 11:00 AM to 2:00 PM Monday through Wednesday in the Exhibit Hall. Coffee, soda and snacks will be sold from 2:00 PM until the close of the Exhibit Hall Monday through Wednesday afternoons.
All room charges are subject to a 11 percent city/state tax and up to a $3.00 occupancy tax, per room night. There is typically an additional per person room charge of $10-$25, depending on the hotel. Hotel room rates are commissionable, with all commissions paid directly to SOT for support of long-range planning initiatives. A $3.00 rebate per room will be used to cover the costs of the Ernest N. Morial Convention Center. All requests for hospitality suites must be approved by SOT Headquarters. Please call Patricia Strong at (703) 343-3115, ext. 311 if requesting a hospitality suite. SOT has two Co-headquarters hotels: the Hilton New Orleans Riverside and the Sheraton.

The SOT-New Orleans Housing Bureau deadline was Friday, February 5, 1999.

If you have not made your housing reservations or have questions regarding your reservation, please call the SOT-New Orleans Housing Bureau at (800) 672-6124.

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crowne Plaza</td>
<td>$143</td>
<td>$143</td>
</tr>
<tr>
<td>333 Poydras Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 525-9444</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 581-7179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Blocks from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2, 3, 4 - Rating: AAA ★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doubletree</td>
<td>$170</td>
<td>$170</td>
</tr>
<tr>
<td>300 Canal Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 581-1300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 522-4108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Blocks from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2, 3, 4 - Rating: AAA ★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embassy Suites</td>
<td>$153</td>
<td>$173</td>
</tr>
<tr>
<td>315 Julia Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 525-1993</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 525-3477</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complimentary Breakfast &amp; Evening Beverages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Blocks from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3, 4 - Rating: AAA ★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hampton Inn</td>
<td>$132</td>
<td>$142</td>
</tr>
<tr>
<td>226 Carondelet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 529-9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 529-9996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complimentary Extended Continental Breakfast — Daily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Blocks from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3, 5 - Rating: AAA ★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hilton New Orleans Riverside</td>
<td>$187</td>
<td>$187</td>
</tr>
<tr>
<td>Poydras at the Mississippi River</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 561-0500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 568-1721</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOT’s Co-Headquarters Hotel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Blocks from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Indoor Walkway to the Convention Center through the Riverwalk Shopping Center)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, 2, 3, 4 - Rating: AAA ★★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holiday Inn-Select</td>
<td>$172</td>
<td>$182</td>
</tr>
<tr>
<td>881 Convention Center Boulevard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 524-1881</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 528-1005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directly Across the Street from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, 3 - Rating: AAA ★★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheraton</td>
<td>$170</td>
<td>$197</td>
</tr>
<tr>
<td>500 Canal Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans, Louisiana 70130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone: (504) 525-2500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (504) 595-5552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOT’s Co-Headquarters Hotel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nightly Jazz Band Entertainment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Blocks from the Convention Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2, 3, 4 - Rating: AAA ★★★★★★</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hotel Name</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| SOT               |        |        |

<table>
<thead>
<tr>
<th>KEY TO HOTEL SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Business Center</td>
</tr>
<tr>
<td>2 Concierge Level</td>
</tr>
<tr>
<td>3 Fitness Room</td>
</tr>
<tr>
<td>4 Gift Shop</td>
</tr>
<tr>
<td>5 Valet Parking</td>
</tr>
</tbody>
</table>
### 1999 Exhibitors

#### Alphabetical Listing

*As of January 15, 1999*

See Exhibitor Directory for product/service descriptions, a map of booth locations and other information.

<table>
<thead>
<tr>
<th>Exhibitant</th>
<th>Booth Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Laboratories</td>
<td>#528</td>
</tr>
<tr>
<td>Academic Book Exhibits</td>
<td>#433</td>
</tr>
<tr>
<td>Academic Press, Inc.</td>
<td>#432/434</td>
</tr>
<tr>
<td>Access Technologies</td>
<td>#307</td>
</tr>
<tr>
<td>Advanced Database Systems</td>
<td>#742</td>
</tr>
<tr>
<td>Affinity BioReagents, Inc.</td>
<td>#423</td>
</tr>
<tr>
<td>Affymetrix, Inc.</td>
<td>#658/660</td>
</tr>
<tr>
<td>Alabama Research &amp; Development</td>
<td>#655</td>
</tr>
<tr>
<td>Allentown Caging Equipment Co., Inc.</td>
<td>#713</td>
</tr>
<tr>
<td>Alternative Design</td>
<td>#538</td>
</tr>
<tr>
<td>Alza Scientific Products &amp; Alzet Osmotic</td>
<td>#607/609</td>
</tr>
<tr>
<td>American Board Of Toxicology, Inc.</td>
<td>#121</td>
</tr>
<tr>
<td>American College Of Toxicology</td>
<td>#662</td>
</tr>
<tr>
<td>American Conference of Government Industrial Hygienists (ACGIH®)</td>
<td>#461</td>
</tr>
<tr>
<td>American Petroleum Institute</td>
<td>#119</td>
</tr>
<tr>
<td>American Society For Pharmacology and Experimental Therapeutics</td>
<td>#560</td>
</tr>
<tr>
<td>Amersham Life Science, Inc.</td>
<td>#750</td>
</tr>
<tr>
<td>Ani Lytics, Inc.</td>
<td>#613</td>
</tr>
<tr>
<td>Anlab, Inc.</td>
<td>#208</td>
</tr>
<tr>
<td>Animal Identification and Marking System (AIMS)</td>
<td>#720</td>
</tr>
<tr>
<td>Animals In Research (SOT)</td>
<td>#103</td>
</tr>
<tr>
<td>Applied Preclinical Services</td>
<td>#530</td>
</tr>
<tr>
<td>Association for Assessment of Accreditation of Laboratory Animal Care International (AAALAC International)</td>
<td>#659</td>
</tr>
<tr>
<td>ASPCA National Animal Poison Control Center</td>
<td>#219</td>
</tr>
<tr>
<td>Battelle</td>
<td>#115</td>
</tr>
<tr>
<td>Bench International</td>
<td>#807</td>
</tr>
<tr>
<td>Bio-Life® Associates, Ltd.</td>
<td>#630</td>
</tr>
<tr>
<td>Bio-Serv, Inc.</td>
<td>#719</td>
</tr>
<tr>
<td>Bioanalytical Systems, Inc. (BAS)</td>
<td>#343</td>
</tr>
<tr>
<td>BioDynamics</td>
<td>#555</td>
</tr>
<tr>
<td>Biological Test Center</td>
<td>#629</td>
</tr>
<tr>
<td>Biology and Zoology Research Center, Inc.</td>
<td>#705</td>
</tr>
<tr>
<td>BioMed Data Systems, Inc.</td>
<td>#909/911/913</td>
</tr>
<tr>
<td>Biomedical Testing Services</td>
<td>#540</td>
</tr>
<tr>
<td>BioReliance</td>
<td>#812/814</td>
</tr>
<tr>
<td>Bioscreen Testing Services</td>
<td>#458/460</td>
</tr>
<tr>
<td>CanTox, Inc.</td>
<td>#464</td>
</tr>
<tr>
<td>CCS Associates</td>
<td>#532</td>
</tr>
<tr>
<td>Cederon Corporation</td>
<td>#533</td>
</tr>
<tr>
<td>Central Toxicology Laboratory</td>
<td>Zenea (CTL)</td>
</tr>
<tr>
<td>CH Technologies, Inc./BGI</td>
<td>#120</td>
</tr>
<tr>
<td>Charles River Laboratories, Inc.</td>
<td>#804/806/808</td>
</tr>
<tr>
<td>Chemical Abstracts Service</td>
<td>#407</td>
</tr>
<tr>
<td>Chemical Industry Institute of Toxicology (CIIT)</td>
<td>#631</td>
</tr>
<tr>
<td>Chemsyn Laboratories</td>
<td>#422</td>
</tr>
<tr>
<td>Chrysalis International Corporation</td>
<td>#500/508</td>
</tr>
<tr>
<td>ClinTrials BioResearch, Ltd. (CTBR)</td>
<td>#650/652</td>
</tr>
<tr>
<td>Clonetics/BioWhittaker Corporation</td>
<td>#600</td>
</tr>
<tr>
<td>Colorado Histo-Prep, Inc.</td>
<td>#704</td>
</tr>
<tr>
<td>Comparative Biosciences</td>
<td>#463</td>
</tr>
<tr>
<td>Consultox® Limited</td>
<td>#748</td>
</tr>
<tr>
<td>Consumer Product Testing Co., Inc.</td>
<td>#563</td>
</tr>
<tr>
<td>Cosmetic Ingredient Review</td>
<td>#462</td>
</tr>
<tr>
<td>Covance Laboratories</td>
<td>#901/903/905</td>
</tr>
<tr>
<td>Covance Research Products</td>
<td>#800</td>
</tr>
<tr>
<td>CRC Press, Inc./Lewis Publishers</td>
<td>#440/442</td>
</tr>
<tr>
<td>Cytometry Associates, Inc.</td>
<td>#550</td>
</tr>
<tr>
<td>Data Edge/L.L.C.</td>
<td>#214</td>
</tr>
<tr>
<td>Data Integrated Scientific Systems (D.I.S.S.)</td>
<td>#564</td>
</tr>
<tr>
<td>Data Sciences International</td>
<td>#730/732</td>
</tr>
<tr>
<td>Dorling Kindersley Family Learning</td>
<td>#335</td>
</tr>
<tr>
<td>Dynamic Microsystems, Inc.</td>
<td>#449</td>
</tr>
<tr>
<td>Eastern Medical Publishers</td>
<td>#437</td>
</tr>
<tr>
<td>Ellegaard Gottingen Minipigs</td>
<td>#339</td>
</tr>
<tr>
<td>Elm Hill Breeding Labs, Inc.</td>
<td>#558</td>
</tr>
<tr>
<td>Elsevier Science</td>
<td>#429/431</td>
</tr>
<tr>
<td>ENVIRON</td>
<td>#632</td>
</tr>
<tr>
<td>Environmental Health Perspectives (EHP)</td>
<td>#44</td>
</tr>
<tr>
<td>EPL®, Inc.</td>
<td>#628</td>
</tr>
<tr>
<td>ESA, Inc.</td>
<td>#331</td>
</tr>
<tr>
<td>EUROTOX</td>
<td>#112</td>
</tr>
<tr>
<td>EXAKTOX Technologies, Inc.</td>
<td>#402</td>
</tr>
<tr>
<td>Exponent</td>
<td>#202</td>
</tr>
<tr>
<td>Fraser Williams (Data Systems)</td>
<td>#520/522</td>
</tr>
<tr>
<td>Fraunhofer ITA</td>
<td>#758</td>
</tr>
<tr>
<td>Genesys Research, Inc.</td>
<td>#410</td>
</tr>
<tr>
<td>GENTEST Corporation</td>
<td>#529</td>
</tr>
<tr>
<td>GlobalTox, Inc.</td>
<td>#451</td>
</tr>
<tr>
<td>GMA Industries, Inc.</td>
<td>#648</td>
</tr>
<tr>
<td>Hamilton Kinder</td>
<td>#455</td>
</tr>
<tr>
<td>Hamilton Thorne Research</td>
<td>#515/517</td>
</tr>
<tr>
<td>Harlan Sprague Dawley, Inc.</td>
<td>#818/820/822</td>
</tr>
<tr>
<td>Health Designs, Inc. (HDI)</td>
<td>#620/622</td>
</tr>
<tr>
<td>Hill Top Research, Inc.</td>
<td>#500</td>
</tr>
<tr>
<td>Hilltop Lab Animals, Inc.</td>
<td>#664</td>
</tr>
<tr>
<td>HTI Bio-Services, Inc.</td>
<td>#406/408</td>
</tr>
<tr>
<td>Human Biologics International</td>
<td>#551</td>
</tr>
<tr>
<td>Humana Press</td>
<td>#446</td>
</tr>
<tr>
<td>Huntington Life Sciences</td>
<td>#813</td>
</tr>
<tr>
<td>ICF Kaiser</td>
<td>#744</td>
</tr>
<tr>
<td>IDEXX LS</td>
<td>#355</td>
</tr>
<tr>
<td>IERI/RSRI/Brooks AFB</td>
<td>#357</td>
</tr>
<tr>
<td>IIT Research Institute</td>
<td>#623</td>
</tr>
<tr>
<td>Ilex Oncology, Inc.</td>
<td>SED*</td>
</tr>
<tr>
<td>In Vitro Technologies, Inc.</td>
<td>#764</td>
</tr>
<tr>
<td>IN/US Systems, Inc.</td>
<td>#322</td>
</tr>
<tr>
<td>Ina Research, Inc</td>
<td>SED*</td>
</tr>
<tr>
<td>Incyte Pharmaceutical, Inc.</td>
<td>#657</td>
</tr>
<tr>
<td>Intech Laboratories, Inc.</td>
<td>#409</td>
</tr>
<tr>
<td>INSTEM-Aploco</td>
<td>#507/509</td>
</tr>
<tr>
<td>Institute For In Vitro Sciences, Inc.</td>
<td>#557</td>
</tr>
<tr>
<td>Institute For Scientific Information</td>
<td>#206</td>
</tr>
<tr>
<td>International Congress of Toxicology IX</td>
<td>#118</td>
</tr>
<tr>
<td>International Life Science Institute</td>
<td>#561</td>
</tr>
<tr>
<td>International Union of Toxicology (IUTOX)</td>
<td>#116</td>
</tr>
<tr>
<td>Inveresk Research</td>
<td>#606/608</td>
</tr>
<tr>
<td>Company Name</td>
<td>Booth Number</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>ISIS BioComp</td>
<td>#920</td>
</tr>
<tr>
<td>ITR Laboratories Canada, Inc.</td>
<td>#703</td>
</tr>
<tr>
<td>Jai Research Foundation (JRF)</td>
<td>#556</td>
</tr>
<tr>
<td>Jellinek/Schwartz &amp; Connolly, Inc./Gradient</td>
<td>#503</td>
</tr>
<tr>
<td>John Wiley &amp; Sons</td>
<td>#439</td>
</tr>
<tr>
<td>Klemm Analysis Group, Inc.</td>
<td>#536</td>
</tr>
<tr>
<td>LAB International</td>
<td>#457</td>
</tr>
<tr>
<td>LAB Products, Inc.</td>
<td>#906</td>
</tr>
<tr>
<td>Lab Recherche Pre-Clinique International, Inc.</td>
<td>#459</td>
</tr>
<tr>
<td>LABCAT</td>
<td>#712</td>
</tr>
<tr>
<td>LCG Bioscience</td>
<td>#333</td>
</tr>
<tr>
<td>LHASA Limited</td>
<td>#361</td>
</tr>
<tr>
<td>Liberty Research, Inc.</td>
<td>#521</td>
</tr>
<tr>
<td>Lippincott Williams &amp; Wilkins</td>
<td>#456</td>
</tr>
<tr>
<td>Loats Associates, Inc.</td>
<td>#359</td>
</tr>
<tr>
<td>Lomir Biomedical, Inc.</td>
<td>#542/544</td>
</tr>
<tr>
<td>Lovelace Respiratory Research Institute</td>
<td>#363</td>
</tr>
<tr>
<td>Marshall Farms USA, Inc.</td>
<td>#552</td>
</tr>
<tr>
<td>MDS Pan Labs, Inc.</td>
<td>#309/311</td>
</tr>
<tr>
<td>Med Associates, Inc.</td>
<td>#633</td>
</tr>
<tr>
<td>Midwest Information Systems</td>
<td>#107/109</td>
</tr>
<tr>
<td>Midwest Research Institute</td>
<td>#420</td>
</tr>
<tr>
<td>Mini-Mitter Co., Inc.</td>
<td>#347</td>
</tr>
<tr>
<td>Minority Health Professions Foundation</td>
<td>#341</td>
</tr>
<tr>
<td>Modular Instruments, Inc.</td>
<td>#690</td>
</tr>
<tr>
<td>Molecular Toxicology, Inc.</td>
<td>#217</td>
</tr>
<tr>
<td>Morehouse School of Medicine</td>
<td>SED*</td>
</tr>
<tr>
<td>MPI Research</td>
<td>#301/303</td>
</tr>
<tr>
<td>Multicase, Inc.</td>
<td>#412</td>
</tr>
<tr>
<td>Myrtle's Rabbitry, Inc.</td>
<td>#502</td>
</tr>
<tr>
<td>National Institute of Environmental Health</td>
<td>#110</td>
</tr>
<tr>
<td>National Library Of Medicine</td>
<td>#523</td>
</tr>
<tr>
<td>National Research Council/National</td>
<td>#661</td>
</tr>
<tr>
<td>National Toxicology Program/NIEHS</td>
<td>#562</td>
</tr>
<tr>
<td>Nature America</td>
<td>#218</td>
</tr>
<tr>
<td>NeuroScience Associates</td>
<td>#548</td>
</tr>
<tr>
<td>Northview Biosciences</td>
<td>#616</td>
</tr>
<tr>
<td>NOTOX Safety &amp; Environmental</td>
<td>#450</td>
</tr>
<tr>
<td>Nucro-Technics Incorporated</td>
<td>#447</td>
</tr>
<tr>
<td>Oak Ridge National Laboratory</td>
<td>#345</td>
</tr>
<tr>
<td>Oncon, Inc.</td>
<td>#722</td>
</tr>
<tr>
<td>Optomax</td>
<td>#212</td>
</tr>
<tr>
<td>Greed</td>
<td>#200</td>
</tr>
<tr>
<td>Oxford Biomedical Research, Inc.</td>
<td>#123</td>
</tr>
<tr>
<td>Oxford University Press</td>
<td>#448</td>
</tr>
<tr>
<td>Packard Instrument Company</td>
<td>#221/223</td>
</tr>
<tr>
<td>PATHICO, Inc.</td>
<td>#438</td>
</tr>
<tr>
<td>Pathology Associates/International</td>
<td>#417/919</td>
</tr>
<tr>
<td>Pharmingen</td>
<td>#200</td>
</tr>
<tr>
<td>Pharsight Corporation</td>
<td>#401/403</td>
</tr>
<tr>
<td>Phoenix International Life Sciences, Inc.</td>
<td>#547</td>
</tr>
<tr>
<td>PJD Publications Limited</td>
<td>#435</td>
</tr>
<tr>
<td>Primate Products, Inc.</td>
<td>#921</td>
</tr>
<tr>
<td>Primedica</td>
<td>#413</td>
</tr>
<tr>
<td>Product Safety Labs</td>
<td>#602</td>
</tr>
<tr>
<td>PTRL East, Inc.</td>
<td>#663</td>
</tr>
<tr>
<td>Purina Mills, Inc.</td>
<td>#702</td>
</tr>
<tr>
<td>Quality Associates, Inc.</td>
<td>#421</td>
</tr>
<tr>
<td>Quintiles Preclinical Services</td>
<td>#706/708</td>
</tr>
<tr>
<td>R.O.W./The Immune</td>
<td>#621</td>
</tr>
<tr>
<td>RALA/Write Your Congressman (SOT)</td>
<td>#101</td>
</tr>
<tr>
<td>RCC</td>
<td>#821/823</td>
</tr>
<tr>
<td>Ree Scientific Corp.</td>
<td>#317/319</td>
</tr>
<tr>
<td>Research Information Systems</td>
<td>#337</td>
</tr>
<tr>
<td>Ricerca, Inc.</td>
<td>#722</td>
</tr>
<tr>
<td>Risk Assessment Summer School (RASS)</td>
<td>#116</td>
</tr>
<tr>
<td>San Diego Instruments, Inc.</td>
<td>#501</td>
</tr>
<tr>
<td>Scantech</td>
<td>#513</td>
</tr>
<tr>
<td>Science</td>
<td>#349</td>
</tr>
<tr>
<td>SeAG Software Engineering A.G./The Artae Seed Company</td>
<td>#635</td>
</tr>
<tr>
<td>SGS U.S. Testing Company, Inc.</td>
<td>#715</td>
</tr>
<tr>
<td>Shiin Nippon Biomedical Laboratories/Ltd.</td>
<td>#707/709</td>
</tr>
<tr>
<td>Sierra Biomedical, Inc.</td>
<td>#612/614</td>
</tr>
<tr>
<td>SIMS Deltec</td>
<td>#205</td>
</tr>
<tr>
<td>SITEK Research Laboratories</td>
<td>#329</td>
</tr>
<tr>
<td>Solomon Scientific</td>
<td>#201</td>
</tr>
<tr>
<td>Southern Research Institute</td>
<td>#416/418</td>
</tr>
<tr>
<td>Spring Valley Laboratories, Inc.</td>
<td>#645</td>
</tr>
<tr>
<td>Springborn Laboratories, Inc.</td>
<td>#601/603</td>
</tr>
<tr>
<td>SRI International</td>
<td>#721/723</td>
</tr>
<tr>
<td>Statistics Unlimited, Inc.</td>
<td>#320</td>
</tr>
<tr>
<td>Stillmeadow, Inc.</td>
<td>#716</td>
</tr>
<tr>
<td>Stockton Press</td>
<td>#441</td>
</tr>
<tr>
<td>Stratagene</td>
<td>#922</td>
</tr>
<tr>
<td>Strategic Applications, Inc. (SAI)</td>
<td>#400</td>
</tr>
<tr>
<td>Suburban Surgical Co., Inc.</td>
<td>#809</td>
</tr>
<tr>
<td>Summit Ridge Farms</td>
<td>#313</td>
</tr>
<tr>
<td>T.P.S., Inc.</td>
<td>#617</td>
</tr>
<tr>
<td>Taconic Quality Laboratory Animals &amp; Services.</td>
<td>#728</td>
</tr>
<tr>
<td>Taylor &amp; Francis</td>
<td>#428/430</td>
</tr>
<tr>
<td>Theragen, Inc.</td>
<td>#656</td>
</tr>
<tr>
<td>TNO Toxicology</td>
<td>#923</td>
</tr>
<tr>
<td>Toprac, Inc.</td>
<td>#318</td>
</tr>
<tr>
<td>Toxicology Education Foundation (TEF - SOT)</td>
<td>#104</td>
</tr>
<tr>
<td>Toxicology Excellence For Risk Assessment</td>
<td>#108</td>
</tr>
<tr>
<td>Toxicology Research Laboratory</td>
<td>#918</td>
</tr>
<tr>
<td>Toxicology/Regulatory Services, Inc. (TRS)</td>
<td>#641</td>
</tr>
<tr>
<td>Toxikon Corporation</td>
<td>#647/649</td>
</tr>
<tr>
<td>U.S. Army Center For Health Promotion &amp; Preventive Medicine</td>
<td>#762</td>
</tr>
<tr>
<td>Vitron, Inc.</td>
<td>#549</td>
</tr>
<tr>
<td>White Eagle Toxicology Laboratories</td>
<td>#819</td>
</tr>
<tr>
<td>White Sands Research Center</td>
<td>#304</td>
</tr>
<tr>
<td>WIL Research Laboratories, Inc.</td>
<td>#321/323</td>
</tr>
<tr>
<td>Wildlife International, Ltd.</td>
<td>#802</td>
</tr>
<tr>
<td>XenoBiotic Laboratories, Inc. (XBL)</td>
<td>#760</td>
</tr>
<tr>
<td>XenoTech, LLC</td>
<td>#756</td>
</tr>
<tr>
<td>Xybion Medical Systems</td>
<td>#531</td>
</tr>
</tbody>
</table>

*SED = See Exhibitor Directory for Booth Number*
1999
Colgate-Palmolive Visiting Professorship
in
In Vitro Toxicology

APPLICATIONS WILL BE AVAILABLE IN THE REGISTRATION AREA OF THE CONVENTION CENTER.

Please stop by and pick one up!

1998 GRADUATE STUDENT FELLOWSHIP AWARD WINNERS

Novartis (formerly CIBA-GEIGY)
Recipient:
Kent Carlson
# 864

Hoffmann-La Roche
Recipient:
Kavita Ramamoorthy
# 643

Covance (formerly Hazelton Laboratories)
Recipient:
Rebecca Laposa
# 576

The Procter & Gamble Company
Recipient:
Kristin Williamson
# 1056

The Society of Toxicology would like to express its gratitude to

DR. RICHARD S. WARITZ

For the third year in a row, Dr. Waritz volunteered his own time to review and confirm the scientific terminology in the SOT Annual Meeting Program.

Thank You!
CONTINUING EDUCATION COURSES

(Pre-registration only)
All courses will be held on Sunday, March 14, 1999, at the Ernest N. Morial Convention Center. Please check the signage in the Foyer for assignments.
Note: Your course materials will be available in the course immediately prior to the course (they will not be available at the registration area). If you have your course ticket, go directly to the assigned course room. If you have not received your course ticket, please go to the registration area on Saturday afternoon/evening or on Sunday morning. If you have misplaced your ticket, please go to the Continuing Education Information Booth on the Second Level of the Ernest N. Morial Convention Center on Sunday (the booth will be open 6:30 AM – 2:00 PM).

6:30 AM
Continental Breakfast (Sunrise Mini-Course Only)

7:00 AM – 8:00 AM, SUNRISE MINI-COURSE
Basic Bioinformatics: From Sequence Analysis to Genome Analysis

8:00 AM – 12:00 NOON
1. Evaluation of Male Reproductive Toxicity: Sperm Markers and Epididymal Mechanisms of Toxicity
2. Application of Transgenic Models in Toxicology
3. Gene Regulation by Reactive Oxygen Species
4. In Vitro Methods for Evaluating Biokinetic Parameters for Risk Assessment
5. Advanced Metal Toxicology
6. Chemical Hypersensitivity

1:00 PM – 5:00 PM
7. Techniques for Detection and Quantification of Apoptosis
8. Genomic Technologies and New Screening Strategies for Toxicology
9. Gene Targeting/Null Models in Toxicology
10. The Practice of Structure Activity Relationships (SAR) in Toxicology
11. Target Organ Toxicology: Respiratory Tract Dosimetry and Response to Inhaled Toxicants
12. An Overview of the Tier 1 Screening Battery Proposed by Endocrine Disruptors Screening and Testing Advisory Committee (EDSTAC): Objectives and In Vitro and In Vivo Assays
13. Basics of Ecological Risk Assessment

SYMPOSIA

Date/Time   Topic/Abstract #                Room(s)   Page
Monday 9:30 AM  Cell Cycle Check-Points and Chemical-Induced Stress Response: Survival Versus Death #6-10  208 - 210  30
Monday 1:30 PM  Molecular and Cellular Mechanisms of Antioxidant Action #179-184  R06 - R08  44
Monday 1:30 PM  Biotechnology Products: Novel Compounds and Testing Strategies #185-190  R02 - R03  45

Date/Time   Topic/Abstract #                Room(s)   Page
Tuesday 8:30 AM  Mechanism of Action of Nicotine on Neuronal Acetylcholine Receptors: From Molecule to Behavior #478-483  R04 - R05  68
Tuesday 8:30 AM  Drug Hypersensitivity: Mechanisms of Immune-Mediated Reactions #484-488  R02 - R03  69
Tuesday 8:45 AM  Mechanisms of Action of Naturally-Occurring Anticarcinogens #489-493  R06 - R08  69
Tuesday 1:30 PM  The Developmental Toxicity of Tobacco Smoke #781-785  R06 - R08  93
Wednesday 8:30 AM  The Role of Quinones in Toxicology #1163-1168  R02 - R03  122
Wednesday 8:45 AM  Biologic Markers in Molecular Epidemiology #1169-1174  R06 - R08  123
Wednesday 1:30 PM  Aliphatic Ethers as Fuel Oxygenates: Health Effects and Regulatory Issues #1413-1418  R04 - R05  143
Wednesday 1:30 PM  The Role of DNA Repair in Maintenance of Genome Stability #1419-1423  R06 - R08  144
Wednesday 1:30 PM  Chemical Modifiers of Response to Food-Borne Microbial Pathogens #1424-1429  R02 - R03  144
Thursday 8:30 AM  Metals and Disorders of Cell Accumulation: Modulation of Apoptosis and Cell Proliferation #1713-1717  208 - 210  167
Thursday 8:30 AM  Xenobiotic Effects on Cell Adhesion Molecules and Extracellular Matrix Interactions #1718-1722  R02 - R03  168
Thursday 1:30 PM  Endogenous Estrogens as Carcinogens: Metabolic Activation Through Oxidative Metabolism #1940-1944  208 - 210  185
Thursday 1:30 PM  Reactive Oxygen and Nitrogen Species in the Lung: Cell Activation, Injury, and Apoptosis #1945-1950  R02 - R03  186

SOT
### Workshops

**Date/Time** | **Topic/Abstract #** | **Room(s)** | **Page**
--- | --- | --- | ---
Monday 9:30 AM | Cognitive Tests: Interpretation for Neurotoxicity? #11-15 | R02 - R03 | 30
Monday 9:30 AM | Relationships Between Biopersistence, In Vitro Dissolution Rate and Fiber Toxicity #16-20 | R04 - R05 | 31
Monday 1:30 PM | Validation of Toxicology Test Methods: Immunotoxicology Case Studies #191-195 | 208 - 210 | 46
Monday 1:30 PM | Animal Models of Cardiopulmonary Disease: Impact of Air Pollution on At Risk Populations #196-202 | R04 - R05 | 46
Tuesday 8:30 AM | Carcinogenicity of Cigarette Smoke: Bridging the Gap Between Complex Mixtures and Individual Components #494-499 | 208 - 210 | 70
Tuesday 8:30 AM | Telemetry, Toxicology and Safety Assessment #500-504 | R09 | 70
Wednesday 8:30 AM | Toxicology for Kids: A How-To Guide for Toxicologists #1175-1180 | 208 - 210 | 123
Wednesday 8:30 AM | The Immunotoxicology of Novel Therapeutics #1181-1186 | R04 - R05 | 124
Wednesday 1:30 PM | Environmental Justice: Socioeconomic Inequities and Populations at Risk #1430-1436 | 208 - 210 | 145
Thursday 1:30 PM | Endocrine Disruption and Neurotoxicity: Why Toxicologists Should be Concerned About the Actions of Estrrogenic Chemicals in the CNS #1951-1955 | R04 - R05 | 186

### Innovations in Toxicological Sciences

**Date/Time** | **Topic/Abstract #** | **Room(s)** | **Page**
--- | --- | --- | ---
Tuesday 1:30 PM | Regulation of Gene Expression via the Electrophile Response Element #786-791 | 208 - 210 | 94
Thursday 8:30 AM | Cytokines: Biology, Gene Regulation and Role in the Pathogenesis of Lung Disease #1723-1728 | R04 - R05 | 168

### Roundtables

**Date/Time** | **Topic/Abstract #** | **Room(s)** | **Page**
--- | --- | --- | ---
Wednesday 12:00 NOON | The Challenges of Using Common Mechanisms of Toxicity in Chemical Regulation #1411 | R02 - R03 | 142
Wednesday 12:00 NOON | A Partnership Approach to the Evaluation of Alternative Models for Carcinogenicity Testing #1412 | R04 - R05 | 143

### Platform Sessions

**Date/Time** | **Topic/Abstract #** | **Room(s)** | **Page**
--- | --- | --- | ---
Monday 1:30 PM | Environmental Toxicology #203-214 | 207 | 47
Tuesday 8:30 AM | Antioxidants and Oxidative Injury #505-515 | 207 | 71
Tuesday 1:30 PM | Immune Stimulation #792-803 | 207 | 94
Wednesday 8:30 AM | Pesticides #1187-1194 | 207 | 125
Wednesday 1:30 PM | TCDD #1437-1448 | 207 | 146

### Poster Discussion Sessions

*Please check signage outside the room for discussion topic areas.*

**Date/Time** | **Topic/Abstract #** | **Room(s)** | **Page**
--- | --- | --- | ---
Monday 9:30 AM | Immunotoxicity: Modulation of T Cell Responses and Host Resistance #21-31 | 206 | 32
Monday 1:30 PM | Estrogens and Male Reproductive System Development #215-226 | 206 | 48
Monday 1:30 PM | Lead Bioavailability, Developmental Toxicity and Public Health #227-237 | R09 | 49
<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Topic/Abstract #</th>
<th>Room(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday 8:30 AM</td>
<td>P450 Knockout Mice #516-522</td>
<td>R01</td>
<td>72</td>
</tr>
<tr>
<td>Tuesday 8:30 AM</td>
<td>Perchlorate - Toxicology and Risk Assessment #523-535</td>
<td>206</td>
<td>73</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>Nasal Toxicology #804-814</td>
<td>206</td>
<td>95</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>Safety Assessment of Biologics and Biotechnology Derived Products #815-823</td>
<td>R09</td>
<td>96</td>
</tr>
<tr>
<td>Wednesday 8:30 AM</td>
<td>Transgenic Animals: Carcinogenicity Testing and Mechanisms #1195-1205</td>
<td>206</td>
<td>125</td>
</tr>
<tr>
<td>Wednesday 8:30 AM</td>
<td>TNF-α and Other Cytokines as Mediators of Hepatoxicity #1206-1215</td>
<td>R01</td>
<td>126</td>
</tr>
<tr>
<td>Wednesday 8:30 AM</td>
<td>Airborne Particulate Matter: In Vitro Toxicity #1216-1226</td>
<td>R09</td>
<td>127</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Mitochondria in Apoptosis #1449-1459</td>
<td>206</td>
<td>147</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Airborne Particulate Matter: In Vitro Toxicity #1460-1469</td>
<td>R09</td>
<td>148</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>Alternative Models for Mutagenicity and Carcinogenicity Testing #1729-1741</td>
<td>206</td>
<td>169</td>
</tr>
<tr>
<td>Thursday 1:30 PM</td>
<td>Respiratory Hypersensitivity #1956-1968</td>
<td>206</td>
<td>187</td>
</tr>
</tbody>
</table>

**POSTER SESSIONS**

All posters will be displayed from 9:30 AM - 11:30 AM (Monday - Wednesday) and 8:30 AM - 11:30 AM (Thursday) or 1:30 PM - 4:30 PM. Sessions indicated by an asterisk (*) will be attended from 9:30 AM - 11:00 AM or 1:30 PM - 3:00 PM (except Thursday morning when they will be displayed from 8:30 AM - 11:30 AM and attended from 8:30 AM - 10:00 AM). Those without an asterisk will be attended from 11:00 AM - 12:30 PM or 3:00 PM - 4:30 PM (except Thursday morning when they will be attended 10:00 AM - 11:30 AM).

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Topic/Abstract #</th>
<th>Room(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 9:30 AM</td>
<td>* Reactive Intermediates #32-46</td>
<td>Hall A</td>
<td>33</td>
</tr>
<tr>
<td>Monday 9:30 AM</td>
<td>Polycyclic Aromatic Hydrocarbons #47-70</td>
<td>Hall A</td>
<td>34</td>
</tr>
<tr>
<td>Monday 9:30 AM</td>
<td>* Developmental Toxicology I #71-102</td>
<td>Hall A</td>
<td>36</td>
</tr>
<tr>
<td>Monday 9:30 AM</td>
<td>Mixtures #103-111</td>
<td>Hall A</td>
<td>38</td>
</tr>
<tr>
<td>Monday 9:30 AM</td>
<td>* Kidney #112-147</td>
<td>Hall A</td>
<td>39</td>
</tr>
<tr>
<td>Monday 9:30 AM</td>
<td>Natural Products #148-167</td>
<td>Hall A</td>
<td>40</td>
</tr>
<tr>
<td>Monday 9:30 AM</td>
<td>* Hematopoietic System #168-178</td>
<td>Hall A</td>
<td>43</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>* Inflammation #238-251</td>
<td>Hall A</td>
<td>50</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>Food Safety #252-281</td>
<td>Hall A</td>
<td>51</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>* TCDD, Ah Receptor and ARNT #282-305</td>
<td>Hall A</td>
<td>53</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>In Vitro: Methods and Toxicity #306-332</td>
<td>Hall A</td>
<td>55</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>* Skin #333-370</td>
<td>Hall A</td>
<td>57</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>Risk Assessment I #371-405</td>
<td>Hall A</td>
<td>60</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>* Apoptosis I #406-428</td>
<td>Hall A</td>
<td>62</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>Cytochrome P450 I #429-461A</td>
<td>Hall A</td>
<td>64</td>
</tr>
<tr>
<td>Monday 1:30 PM</td>
<td>* Neurotoxicity of Pesticides #462-476</td>
<td>Hall A</td>
<td>66</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>* Respiratory Tract Toxicology: Models, Methods and Safety Evaluation #536-568</td>
<td>Hall A</td>
<td>74</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>Genotoxicity #569-593</td>
<td>Hall A</td>
<td>76</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>* Respiratory Tract Toxicology: Mechanisms #594-628</td>
<td>Hall A</td>
<td>78</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>Receptor Biology/Signal Transduction #629-647</td>
<td>Hall A</td>
<td>80</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>* Physiologically Based Pharmacokinetic Modeling #648-681</td>
<td>Hall A</td>
<td>82</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>Developmental Toxicology II #682-711</td>
<td>Hall A</td>
<td>85</td>
</tr>
<tr>
<td>Date/Time</td>
<td>Topic/Abstract #</td>
<td>Room(s)</td>
<td>Page</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>Apoptosis II #712-739</td>
<td>Hall A</td>
<td>87</td>
</tr>
<tr>
<td>Tuesday 9:30 AM</td>
<td>Molecular/Cellular #740-780</td>
<td>Hall A</td>
<td>89</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>* Immune Suppression: Methods, Mechanisms and Effects #824-858</td>
<td>Hall A</td>
<td>97</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>Pesticides #859-890</td>
<td>Hall A</td>
<td>99</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>* Liver and Gastrointestinal System #891-922</td>
<td>Hall A</td>
<td>102</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>Antioxidants and Oxidative Injury #923-964A</td>
<td>Hall A</td>
<td>104</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>* Disposition/Pharmacokinetics #965-1001</td>
<td>Hall A</td>
<td>107</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>TCDD #1002-1035</td>
<td>Hall A</td>
<td>110</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>* Biotransformation #1036-1077</td>
<td>Hall A</td>
<td>112</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>Carcinogenesis I #1078-1123</td>
<td>Hall A</td>
<td>115</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>* Cellular Neurotoxicity of Metals #1124-1157</td>
<td>Hall A</td>
<td>119</td>
</tr>
<tr>
<td>Tuesday 1:30 PM</td>
<td>Education #1158-1161</td>
<td>Hall A</td>
<td>121</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>* Environmental/Ecotoxicology #1227-1253</td>
<td>Hall A</td>
<td>128</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>Endocrine Toxicity #1254-1268</td>
<td>Hall A</td>
<td>130</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>* Genomics/Gene Expression #1269-1301</td>
<td>Hall A</td>
<td>131</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>Halogenated Hydrocarbons #1302-1326</td>
<td>Hall A</td>
<td>134</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>* Cell Proliferation and Cell Cycle #1327-1340</td>
<td>Hall A</td>
<td>136</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>Neurotoxicology of Non-Metals #1341-1380</td>
<td>Hall A</td>
<td>137</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>* Metallothionin #1381-1389</td>
<td>Hall A</td>
<td>140</td>
</tr>
<tr>
<td>Wednesday 9:30 AM</td>
<td>CV System #1390-1410</td>
<td>Hall A</td>
<td>141</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>* Hypersensitivity #1470-1499</td>
<td>Hall A</td>
<td>149</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Safety Evaluation #1500-1540</td>
<td>Hall A</td>
<td>151</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>* Metal Toxicology - Lead, Mercury, Chromium and Others #1541-1575</td>
<td>Hall A</td>
<td>154</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Eye #1576-1589</td>
<td>Hall A</td>
<td>156</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>* Regulatory/Policy #1590-1606</td>
<td>Hall A</td>
<td>157</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Carcinogenesis II #1607-1648</td>
<td>Hall A</td>
<td>159</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>* Metals - Arsenic and Cadmium #1649-1690</td>
<td>Hall A</td>
<td>162</td>
</tr>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Behavioral Neurotoxicology #1691-1712</td>
<td>Hall A</td>
<td>164</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>* Methods #1742-1765</td>
<td>Hall A</td>
<td>170</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>Screening for Endocrine-Mediated Toxicity #1766-1794</td>
<td>Hall A</td>
<td>172</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>* Reproductive Toxicology #1795-1832</td>
<td>Hall A</td>
<td>174</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>Glutathione #1833-1858</td>
<td>Hall A</td>
<td>176</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>* Risk Assessment II #1859-1892</td>
<td>Hall A</td>
<td>178</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>Toxicology Database and Communication #1893-1898</td>
<td>Hall A</td>
<td>181</td>
</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>* Cytochrome P450 II #1899-1938</td>
<td>Hall A</td>
<td>181</td>
</tr>
</tbody>
</table>
Continuing Education Courses

SUNDAY, MARCH 14, 1999

The Continuing Education Program offers a wide range of courses that cover state-of-the-art knowledge in toxicology as well as new developments in toxicology and related disciplines. Courses can be applied toward certifying and licensing board requirements and may also be used for recertification with the American Board of Toxicology (ABT). Both basic and advanced course topics are offered. The basic course is intended to assist investigators in developing, implementing, or learning techniques or approaches, and the advanced course is intended to be a course of interest to individuals already working in the field.

Please Note: Continuing Education Courses are scheduled concurrently in either AM (8 – 12) or PM (1 – 5) sessions, except for one class from 7 AM – 8 AM.

BASIC BIOINFORMATICS: FROM SEQUENCE ANALYSIS TO GENOME ANALYSIS

Sunrise Mini-Course Basic

Must preregister by February 1.

Complimentary continental breakfast from 6:30 – 7:00 AM is included.

No charge for this course for those enrolled in two other CE courses; however, pre-registration is required.

Instructor: William Mattes, Pharmacia & Upjohn, Kalamazoo, MI

Sponsored By: The Molecular Biology Specialty Section

Bioinformatics was born out of a need to make sense of the coded data generated after the advent of DNA sequencing. Thus molecular biology saw not only an influx of computer analyses but also a visionary approach to the explosion of information - public databases of sequence information (e.g., GenBank). This short, basic course is designed to introduce the participants to the field of bioinformatics and will provide a background, both historical and conceptual, for understanding present and future applications of this technology in toxicology. Bioinformatics will be explained as a variety of tools, encompassing nucleotide and protein sequence analysis, structure and function prediction tools, genetic linkage analysis, and database mining tools. The vast array of databases available over the Web will be introduced, as well as some of the approaches that one may take to use these data in a simple fashion (e.g., retrieval of GenBank information at a number of different levels).

EVALUATION OF MALE REPRODUCTIVE TOXICITY: SPERM MARKERS AND EPIDIDYMAL MECHANISMS OF TOXICITY

AM #1 Basic

Sponsored By: The Reproductive & Developmental Specialty Section

Chairpersons: Marion Miller, Dept. of Environmental Toxicology, University of California, Davis, CA, and Lori Dastal, Parke-Davis Pharmaceutical Research, Division of Warner-Lambert Company, Ann Arbor, MI

The past few years have witnessed a growing sophistication in the approaches used to evaluate the impact of chemicals on the male reproductive system. Several of these approaches have now been incorporated into regulatory testing guidelines. This course will cover the basic biology of sperm formation, maturation within the epididymis, and development of fertilizing capability, and will describe methods used to characterize each process. How these approaches have been integrated into reproductive toxicity tests and the types of data that are obtained will be reviewed.

Basic Functions of the Mammalian Epididymis, Barry Hinton, University of Virginia Health Sciences Center, Charlottesville, VA.

Toxicology of the Epididymis: From Unique Experimental Strategies to Novel Biomarkers, Gary Klinefelter, NIEHS, US EPA, Research Triangle Park, NC.

Improved Methods for Assessing Sperm Functions and Interpreting the Results, Sally D. Perceault, NIEHS, US EPA, Research Triangle Park, NC.

Toxicology Testing for Male Reproductive Effects of Chemicals and Drugs: Methods and Applications, Lori Dostal, Parke-Davis Pharmaceutical Research, Division of Warner-Lambert Company, Ann Arbor, MI.

APPLICATION OF TRANSGENIC MODELS IN TOXICOLOGY

AM #2 Advanced

Sponsored By: The Molecular Biology Specialty Section

Chairperson: Ray Tennant, Laboratory of Environmental Carcinogenesis and Mutagenesis, NIEHS, Research Triangle Park, NC

The objective of this advanced course is to familiarize the participants with experimental transgenic models and their relevance for use in toxicology. Many toxic effects, particularly the induction of cancer, are well recognized to be the consequence of interactions with specific genes or gene products. While few specific genes or genetic pathways have been identified, it is clear that such information is critical. Mechanisms of toxicity and carcinogenicity are understood by identifying the target genes and gene products and defining how they are altered in expression or function. Development of methods for introducing specific genes into the mammalian genome has provided new approaches to studying the toxicologic and carcinogenic effects of chemicals, drugs and other agents. This Continuing Education course will describe the methods by which gene constructs are developed and transferred into the germline of mice. This course will provide specific examples of transgenic
models used in the study of developmental and reproductive processes. Molecular aspects of transgene insertion, structure, and expression will also be presented. Specific examples of transgenic models with toxicological applications will be discussed, as well as the current status of the evaluation of transgenic models for safety assessment of drugs and chemicals. The goal of this course is to provide lively lectures on state-of-the-art transgenic technologies for innovative applications in toxicology.

**Introduction to Transgenics**, Raymond W. Tennant, NIEHS, Research Triangle Park, NC.

**Development of Transgenic Mouse Models: Examples in Reproduction and Development**, Mitch Eddy, NIEHS, Research Triangle Park, NC.

**Molecular Aspects of Transgene Integration and Expression**, Ronald Cannon, NIEHS, Research Triangle Park, NC.

**Applications of Transgenic Models in Toxicology**, Tom Goldsworthy, Integrated Laboratory Systems, Research Triangle Park, NC.

**Transgenic Models in Drug and Chemical Safety Assessment**, Raymond W. Tennant, NIEHS, Research Triangle Park, NC.

**GENE REGULATION BY REACTIVE OXYGEN SPECIES**

AM #3 Advanced

**Sponsored By: The Molecular Biology Specialty Section**

**Chairperson: Alvaro Puga, University of Cincinnati, Cincinnati, OH**

Many environmental pollutants, toxicants, and heavy metals affect cellular functions by causing drastic changes in the prooxidant status of the cell that require a resetting of critical homeostatic parameters. These changes may lead to alterations in cell cycle progression and to activation or silencing of critical genes, thus disrupting normal cell functions. This course will describe the basic principles and concepts of free radical biology and chemistry, including the source and generation of free radicals and oxidative stress and the mechanisms generating reactive oxygen species during mitochondrial respiration. The mechanisms that regulate the cell cycle and how oxidative stress perturbs these processes and triggers cell cycle arrest, proliferation or apoptosis will be reviewed. Current status of our understanding of oxidant-induced changes in gene expression will also be presented.

**Free Radical Biology and Chemistry**, Sidney Stohs, Creighton University, Omaha, NE.

**Generation of Reactive Oxygen in Mitochondria**, Kendall Wallace, University of Minnesota, Duluth, MN.

**Regulation of Gene Expression by Oxidants**, Alvaro Puga, University of Cincinnati, Cincinnati, OH.

**Cell Cycle Regulation by Oxidative Stress**, Michael Carty, University of Cincinnati Medical Center, Cincinnati, OH.

**IN VITRO METHODS FOR EVALUATING BIOKINETIC PARAMETERS FOR RISK ASSESSMENT**

AM #4 Basic

**Sponsored By: The In Vitro Specialty Section**

**Chairperson: John M. Frazier, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH**

A key component of the risk assessment process is the development of quantitative dose/exposure-response relationships (D/E-R). Recently, the increasing use of biologically based kinetic (BBK) models refine these relationships, i.e., reduce uncertainties, by better estimating the target organ dose of a chemical and/or its metabolites under a given exposure scenario. This approach provides useful, mechanistically based techniques to conduct route-to-route and inter-species extrapolations of the kinetic component of the D/E-R relationship. New approaches to BBK modeling are rapidly developing and experimental techniques to evaluate model parameters independently of in vivo studies are available. This basic course will introduce these new techniques for estimating kinetic parameters related to membrane transport, protein binding, metabolism and partitioning. Beginners in biokinetic modeling will learn how to develop and implement experimental techniques for evaluating kinetic parameters. More advanced modelers can gain an appreciation for the state-of-the-art of the experimental basis for parameter estimation. This course should be of interest to individuals involved in quantitative risk assessment, in vitro technology, mechanistic toxicology and safety evaluations.

**Kinetic Modeling and Risk Assessment—Introduction**, John M. Frazier, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH.

**Evaluating Mechanisms of Membrane Transport Using In Vitro Systems**, Mary Vore, University of Kentucky Chandler Medical Center, Lexington, KY.

**Evaluation of Protein Binding Parameters for Kinetic Modeling**, Michael Owens, University of Arkansas for Medical Sciences, Little Rock, AR.

**Determining Metabolic Parameters in In Vitro Systems**, Gregory L. Kedderis, Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

**Estimation of Parameters for Tissue-Blood Partitioning**, Joost De Jongh, Research Institute of Toxicology, Utrecht University, Utrecht, The Netherlands.

**ADVANCED METAL TOXICOLOGY**

AM #5 Advanced

**Sponsored By: The Metals Specialty Section**

**Chairperson: Michael Waalkes, NCI at NIEHS, Research Triangle Park, NC**

Metals are an indispensable part of life and many are essential, participating in a vast array of critical functions, including control of gene expression through transcription factors. However, all metals are potentially toxic and can result in a variety of adverse effects including neurological disease and aggressive malignancies. This advanced course addresses important and timely issues as an extension of the previously offered basic course. Discussion includes metal-binding interactions that may lead to dysfunction, adaptive mechanisms evolved to minimize metal toxicity, gene expression, and mimicry used by the metals to gain access by systems intended for the transport and storage of endogenous compounds. This course should have broad appeal and be of interest to those working in metals, carcinogenesis, neurotoxicology and risk assessment.

**Advanced Metal Toxicology: Introduction**, Michael F. Waalkes, NCI, NIEHS, Research Triangle Park, NC.

**Bioinorganic Chemistry of Metals**, Dennis Winge, University of Utah Medical Center, Salt Lake City, UT.
Chemical hypersensitivity, or an allergic response to exogenous chemicals, is an important problem in occupational medicine. Recently, significant advances have been made in understanding the molecular mechanism of contact dermatitis and respiratory hypersensitivity and in elucidating the characteristics of chemicals that are responsible for producing these effects. Chemicals responsible for producing allergic responses and factors influencing susceptibility to chemical hypersensitivity will be discussed as will models for testing the potential allergenicity of these agents. Participants in this course will gain an appreciation of these recent advances and their role in understanding and predicting chemical hypersensitivity. Interpretation and extrapolation of test results will be integrated together with a discussion of the rationale for establishing regulatory guidelines.

Chemical Hypersensitivity: Introduction, Jacques Descotes, INSERM 80, Dept. Pharmacy, Medical Toxicology, and Environmental Medicine, Faculté de Medicine, Lyon, France.

Immunobiological Mechanisms of Allergic Contact Dermatitis, Ian Kimber, Zeneca CII, Macclesfield, Cheshire, United Kingdom.


Models of Contact and Respiratory Sensitivity and Structure-Activity Relationships, Meryl H. Karol, University of Pittsburgh, Pittsburgh, PA.

Chemical Allergy: Regulatory Considerations, Martinus Lovik, National Institute of Public Health, Oslo, Norway.

Conclusions/Discussion, Meryl H. Karol, University of Pittsburgh, Pittsburgh, PA.

Techniques for Detection and Quantification of Apoptosis

Sponsored By: The Molecular Biology Specialty Section

Chairperson: Rick Schnellmann, University of Arkansas for Medical Sciences, Little Rock, AR

Apoptosis is an important aspect of toxicity, yet its detection and quantification can be problematic. Recent advances have resulted in a variety of techniques designed to identify and quantify apoptotic cell death. The method of choice for a particular experimental application depends on a number of factors including the target tissue type and whether the experiment is performed in vivo or in vitro. The aim of this basic course is to discuss the state-of-the-art techniques available for detection and quantification of apoptosis. The speakers will describe the use of flow cytometry and of light and electron microscopy, as well as the determination of DNA fragmentation and caspase activation as techniques for evaluation of apoptosis. The principles of the methodology, advantages and disadvantages, and identified pitfalls and limitations of individual techniques will be discussed and compared.

Techniques for Detection and Quantification of Apoptosis: Introduction, Rick Schnellmann, University of Arkansas for Medical Sciences, Little Rock, AR.

Detection and Quantification of Apoptosis by Light and Electron Microscopy, Myrtle A. Davis, University of Maryland, Baltimore, MD.

Detection and Quantification of Apoptosis by Flow Cytometry, Martin Poot, University of Washington, Seattle, WA.

Detection and Quantification of Apoptosis using Caspases, Yuri Lazebnik, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

Detection and Quantification of Apoptosis using DNA Fragmentation, Kelvin Cain, University of Leicester, Leicester, United Kingdom.

Question and Answer Period, Speakers.

Genomic Technologies and New Screening Strategies for Toxicology

Sponsored By: The Molecular Biology and Regulatory & Safety Evaluation Specialty Sections

Chairpersons: J. Y. Rosenblum, Schering-Plough Research Institute, Lafayette, NJ, and Roger Ulrich, Abbott Laboratories, Abbott Park, IL

With the advent of combinatorial chemistry, the rate of discovery of potential new pharmaceuticals has far exceeded the capacity for preclinical toxicological evaluation using traditional approaches. Further, early refinement of leads can reduce costs and enhance success in preclinical and clinical development. As non-human and human genomes become fully sequenced, a tremendous amount of genetic information is being gathered. This information (in the form of cDNA or oligonucleotides) can be used in a variety of formats to examine for changes in expression following exposure of cells or animals to potential toxins. Microarrays allow for the simultaneous examination of responses in thousands of genes, while other formats using oligonucleotide or RNA probes allow for high-throughput examination of more selective responses. This course will provide an overview of different high fidelity and high throughput approaches for analyzing changes in gene expression at the molecular level that may occur during a toxic response.

Novel Assay Formats for Analyzing Complex Genetic Information, Thomas Ryder, Affymetrix, Inc., Santa Clara, CA.


Pharmaceutical Proteomics, Leigh Anderson, Large Scale Biology Corporation, Rockville, MD.

Use of the Quantigene Assay for High Throughput Screening of Nucleic Acid Targets, Marque Tod, Chiron Corporation, Emeryville, CA.

Continued
GENE TARGETING/NULL MODELS IN TOXICOLOGY

Sponsored By: The Molecular Biology Specialty Section

Chairperson: Christopher Bradfield, McArdle Laboratory for Cancer Research, Madison, WI

Gene knockout technology has proven to be an extremely valuable tool for examining mechanisms of toxicity. Conventional knockout mice provide a unique model for assessing the role of gene products in vivo, as well as a resource to examine the intricate details of cell signaling and function associated with target proteins. Knockout mouse models have been successfully employed to define the role of specific gene products in the toxic response to environmental chemicals, pharmaceutical agents, and endogenous hormones. The availability of conditional or inducible knockout promises to take this technology to a new level by allowing close examination of the role of specific genes at designated stages of development. Specific tissue or cell type knockouts may also be constructed to examine the mechanism of toxicity in the context of tissue and organ interactions and the susceptibility to chemical agents at different stages. This Continuing Education course has been designed to provide an overview of methodologies for conventional and conditional knockout systems, and suitable measurements of toxic and pharmacokinetic endpoints. This overview will be followed by specific examples of direct relevance to toxicological problems, including aryl hydrocarbon receptor (AhR) and p53 knockout mice.

Knockout Mice for use in Toxicology and Carcinogenesis, Jerrold M. Ward, National Cancer Institute, Frederick, MD.

Interpreting Results from Gene Targeting Experiments, Christopher Bradfield, McArdle Laboratory for Cancer Research, Madison, WI.

Prevention of Tumorigenesis in p53-Deficient Mice, Susan N. Perkins, National Cancer Institute, Frederick, MD.

Techniques in Gene Targeting, Jennifer V. Schmidt, Howard Hughes Medical Institute, Princeton University, Princeton, NJ.

THE PRACTICE OF STRUCTURE ACTIVITY RELATIONSHIPS (SAR) IN TOXICOLOGY

Sponsored By: The Molecular Biology Specialty Section

Chairperson: James McKinney, US EPA, Research Triangle Park, NC

Both qualitative and quantitative modeling methods relating chemical structure to biological activity, called quantitative structure activity relationship analyses or (QSAR), have been applied to the prediction and characterization of chemical toxicity. This course will discuss some of the modeling approaches that are tailored to issues in toxicology and will focus on QSAR as a valuable complement to experimental data and as a departure point for further inquiry into molecular mechanisms. Examples will illustrate the different approaches to and many facets of the "practice" of SAR as they pertain to current in vivo and in vitro toxicology analyses, including limitations. Topics include the pros and cons of modeling techniques, application of 3-D SAR to understand the propensity of chemicals to cause endocrine disruption, and use of models to analyze biological activity of inorganic and organic chemicals in toxicology. One speaker will integrate all available data for a specific biological system with expert systems for prediction of toxicologic outcome. This course will illuminate the utility and limitations of modeling approaches as one component for better integration of physicochemical and biological properties into risk assessment.


Application of 3D-QSAR Methods to Characterization and Prediction in Toxicology, Chris Waller, OSI Pharmaceuticals, Inc., Durham, NC.

Quantitative Ion-Character-Activity Relationships as an Approach to Predicting Metal Toxicity, Michael Newman, Virginia Institute of Marine Science, Gloucester Point, VA.

Development, Validation, and Application of Expert Systems for Predicting Toxicity, Frank Gerberick, Procter & Gamble Company, Cincinnati, OH.

TARGET ORGAN TOXICOLOGY, RESPIRATORY TRACT DOSIMETRY AND RESPONSE TO INHALED TOXICANTS

Sponsored By: The Inhalation Specialty Section

Chairperson: John Morris, University of Connecticut, Storrs, CT

Proper interpretation of toxicity data from inhalation studies must incorporate numerous scientific considerations that are unique to this route of administration. This basic course will be useful for scientists from a number of different sectors and provide an overview of respiratory tract structure, dosimetry, and responses to inhaled toxicants. Special emphasis will be placed upon interspecies differences in structure, response and dosimetry, and how these differences are important in understanding and extrapolating animal response data across species lines. Data from transgenic animals, as well as recently developed federal inhalation risk assessment strategies, will be covered. Examples of toxicants of current concern and methods in which previous information can be used in comprehensive quantitative risk assessment strategies will be discussed. This course will provide information of particular interest to all individuals from the academic, regulatory, and industrial sectors who are involved in safety evaluation of inhaled materials, as well as to those individuals from the pharmaceutical industry utilizing this particular exposure route.

Respiratory Tract Dosimetry and Response to Inhaled Toxicants: An Overview, John Morris, University of Connecticut, Storrs, CT.

Structure of the Respiratory Tract, Kent Pinkerton, University of California-Davis, Davis, CA.

Particle Dosimetry: Mechanism, Species Differences, and Extrapolation Modeling, Richard B. Schlesinger, New York University Medical Center, Tuxedo, NY.

Gas Dosimetry: Mechanisms, Species Differences, and Extrapolation Modeling, John Morris, University of Connecticut, Storrs, CT.

Tissue Responses of the Upper and Lower Respiratory Tracts, Jack Harkema, Michigan State University, East Lansing, MI.
AN OVERVIEW OF THE TIER 1 SCREENING BATTERY PROPOSED BY ENDOCRINE DISRUPTORS SCREENING AND TESTING ADVISORY COMMITTEE (EDSTAC): OBJECTIVES AND IN VITRO AND IN VIVO ASSAYS

Sponsored By: The Reproductive and Developmental Specialty Section

Chairpersons: Leon Earl Gray, Jr., US EPA, Research Triangle Park, NC, and Jon Cook, Pfizer, Inc., Groton, CT

In August 1996 the US EPA was directed by Congress to develop assays for screening and testing chemicals for endocrine activity. To meet these requirements, the EPA formed the EDSTAC which recently proposed Tiered Screening (TIS) and Tier 2 Testing Batteries. This course will focus on the assays recommended for TIS. TIS is designed to detect chemicals that alter EAT (estrogen (E), androgen (A) and thyroid (T)) function by acting as hormone receptor agonists or antagonists or by altering hypothalamic-pituitary-gonadal (HPG) function and contains both in vitro and in vivo assays. The in vitro assays assess E and A receptor binding, transcriptional activation and steroidogenesis. The three in vivo assays include a uterotrophic assay for estrogenicity, an apical 20 day assay using the weanling female to detect altered E, T and HPG, and a specific assay to identify A and anti-A activities. TIS also includes two nonmammalian in vivo assays, covering amphibian metamorphosis (for antithyroid activity) and a short-term apical fish reproduction test (sensitive to EA). EDSTAC also recommended that alternative in vivo and in vitro assays be considered as replacements for assays in TIS, if they could be standardized and validated, and the status of these will be covered. Finally, a short-term in utero assay and new and improved in vitro assays for TIS will be presented.

Overview of the EDSTAC Process and Background of the Endocrine Screening and Testing Batteries, Rochelle Tyl, Research Triangle Institute, Research Triangle Park, NC.

In Vito-Tier 1 Screening Assays, Hight throughput Prescreening Assays and Alternative In Vito Assays, William R. Kelce, Monsanto Company, St. Louis, MO.

In Vixo-Tier 1 Screening Assays, Leon Earl Gray, Jr., US EPA, Research Triangle Park, NC.

In Vixo-Tier 1 Screening-Alternative Assays, Jon Cook, Pfizer, Inc., Groton, CT.

Overview of Amphibian and Fish Assays for Evaluation of Chemicals with Endocrine Activity, Gary Ankley, US EPA, Duluth, MN.

BASICS OF ECOLOGICAL RISK ASSESSMENT

Sponsored By: The Society of Environmental Toxicology and Chemistry (SETAC)

Chairperson: Angela Schmidt, 3D Environmental, Cincinnati, OH

This course will introduce attendees to basic concepts of Ecological Risk Assessment (ERA). Participants will gain an understanding of the necessary components of an ERA and data requirements. The course is based on current regulatory guidelines for conducting site-specific ERAs. Specific topics will include guidelines, conceptual site model development, endpoint selection, exposure assessment and pathway analysis, effects assessment, ecotoxicological evaluation, and characterization of risks. Extrapolation and interpretation of ecotoxicological values will be discussed. Various Risk Characterization methods will be presented. Participants will be given the opportunity to apply course concepts to exercises and case studies. This basic course should be of interest to individuals involved in ecological risk assessment, environmental toxicology, exposure assessment, and safety evaluation.

Introduction to Ecological Risk Assessment and Regulatory Guidelines, Richard Reaves, 3D Environmental, Cincinnati, OH.

Endpoint Selection and Exposure Assessment, Angela Schmidt, 3D Environmental, Cincinnati, OH.

Ecotoxicological Assessment, Angela Schmidt, 3D Environmental, Cincinnati, OH.

Risk Characterization and Case Studies, Richard Reaves, 3D Environmental, Cincinnati, OH.
SATURDAY, MARCH 13

1:30 PM – 3:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 207

1999 LEADERSHIP ORIENTATION WORKSHOP FOR COMMITTEE MEMBERS

If you are currently or will next year be a member of an SOT committee, please make plans now to attend the 1999 Leadership Orientation Workshop scheduled for 1:30 p.m. Saturday, March 13. All SOT members serving on committees are strongly encouraged to attend. With new committee assignments taking effect on May 1, 1999, the workshop is intended to provide guidance and answer questions that new members and chairs may have. The SOT strategic plan, administrative practices and procedures (e.g., budgets) and other important information for new chairpersons are just a few of the areas to be covered. The meeting also serves as an opportunity for Committees to get a head start on setting priorities for the year. Therefore, in order for the workshop to be a success, it is imperative that as many committee members as possible attend. For more information, contact SOT Headquarters.

SATURDAY, MARCH 13
4:00 PM – 6:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 211

MEDIA TRAINING WORKSHOP FOR TOXICOLOGISTS

By Kalish Communications of Washington, DC

This media training workshop is designed to teach participants how to:

- Develop easy-to-communicate toxicology messages and get them into every interview;
- Not to be misquoted;
- Handle tough interviews and sensitive issues;
- Dress, sit, stand and gesture appropriately for all media interviews;
- Get reporters to print/air what you want them to; and
- Ask 10 key questions before every media interview.

Learn to control the message and the media! This workshop is lively, fun, creative, challenging and loaded with critical information. This seminar is for beginning and advanced media savvy toxicologists.

Registration is free for SOT Media Resource Specialists and $50 for all others. All attendees will receive a free reference guide.

SATURDAY, MARCH 13
7:00 PM – 10:00 PM
EMBASSY SUITES

UNDERGRADUATE EDUCATIONAL PROGRAM FOR VISITING STUDENTS OPENING SESSION

Sponsored By: The Education Committee and the Education Subcommittee for Minority Initiatives

Chairpersons: Rick Schnellmann, University of Arkansas for Medical Sciences, Little Rock, AR, and Ruth Billings, Colorado State University, Fort Collins, CO

SUNDAY, MARCH 14

SUNDAY, MARCH 14
8:30 AM – 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 220

UNDERGRADUATE EDUCATIONAL PROGRAM FOR VISITING STUDENTS

Sponsored By: The Education Committee and the Education Subcommittee for Minority Initiatives

Chairpersons: Rick Schnellmann, University of Arkansas for Medical Sciences, Little Rock, AR, and Ruth Billings, Colorado State University, Fort Collins, CO

The objective of this program is to introduce minority undergraduates and their advisors to toxicology and to encourage preparation for graduate study and pursuit of careers in the discipline. This program will promote interaction of the students with their peers, advisors, and SOT members. The field of toxicology will be introduced in special lectures and through the poster session for visiting students.

8:30 ADVISOR MEETING
Rick G. Schnellmann, Chair SOT Minority Education Committee
Michael Galvin, National Institute of Environmental Health Sciences

9:30 WELCOME—ADVISORS AND STUDENTS
(Convention Center)
Rick G. Schnellmann, Chair, SOT Minority Education Committee

WHAT IS TOXICOLOGY? OPPORTUNITIES IN TOXICOLOGY
Evan Gallagher, University of Florida, College of Veterinary Medicine, Gainesville, FL
SPECIAL TOXICOLOGY LECTURES:

10:30 HOW CHEMICALS INTERACT IN THE BODY
David J. Eaton, University of Washington, Department of Environmental Health

10:45 THE INDUCTION OF LIVER INJURY BY CELLS OF THE IMMUNE SYSTEM
Dwayne Hill, University of Ann Arbor, Michigan

11:15 EVERYTHING YOU EVER WANTED TO KNOW ABOUT IMMUNOTOXICOLOGY BUT WERE AFRAID TO ASK
Judy Zehoff, New York University Medical Center

11:45 LUNCH

1:30 BASIC CONCEPTS ON CHEMICALLY-INDUCED LIVER INJURY
Jose Manastu, University of Connecticut, School of Pharmacy

2:00 WHAT IS GRADUATE SCHOOL? HOW DO I GET IN?
Rick Schneidman, University of Arkansas, Medical Sciences, Little Rock, AR

2:30 PERSPECTIVES FROM A GRADUATE STUDENT
Donald Kirkpatrick, University of Arizona, Cancer Center

2:30 FELLOWSHIPS IN TOXICOLOGY QUESTIONS AND ANSWERS
Michael Galvin, National Institute of Environmental Health Sciences, Research Triangle Park, NC

3:00 OPEN TIME WITH TOXICOLOGY PROGRAM DIRECTORS

3:30 FOCUS GROUPS

Opportunities for employment of toxicologists in various sectors — academia, industry, and government — are changing over time. Toxicologists at different periods of their careers may conclude, either on a voluntary basis or because of mergers and acquisitions, downsizing, or changed company priorities, that they should make changes in their toxicology careers. This workshop will consist of presentations on career planning, on issues to consider by those contemplating a career change or by those upon whom a change is thrust, on whether consulting is a viable alternative, and on changing employment from one toxicology sector to another.

SUNDAY, MARCH 14
3:00 PM – 6:30 PM
ERNST N. MORIAL CONVENTION CENTER
LA LOUISIANE BALLROOM

WELCOMING RECEPTION
Greet your colleagues and plan your itinerary at the Welcoming Reception, which will be held at the Ernest N. Morial Convention Center. Enjoy light snacks and complimentary sodas provided by SOT and sponsors — cash bars will also be available.

SUNDAY, MARCH 14
6:30 PM – 9:30 PM
ERNST N. MORIAL CONVENTION CENTER
ROOM 308

25-YEAR MEMBER RECEPTION
Have you been a member of the Society for 25 years (or perhaps many more)? If so, you will be recognized as a group at the SOT 1999 Annual Meeting in New Orleans, Louisiana.

Please consider joining us at the Annual Meeting so we can extend our gratitude for the solid foundation on which the Society has grown.

SUNDAY, MARCH 14
7:00 PM – 11:00 PM
ERNST N. MORIAL CONVENTION CENTER
HILTON NEW ORLEANS RIVERSIDE HOTEL

STUDENT & POSTDOCTORAL FELLOW RECEPTION
The Society of Toxicology strives each year to improve its Annual Meeting and accomplishes this in part by talking with attendees and listening to their suggestions. Last year, it was suggested that a forum be provided so that students and postdoctoral fellows could meet and talk informally with one another about graduate and postdoctoral programs. Therefore, the Society will be offering a reception for these individuals immediately following the Welcoming Reception. SOT will provide a pasta buffet and DJ. Meeting badges are required.
MONDAY MORNING, MARCH 15

MONDAY MORNING, MARCH 15
7:30 AM - 5:00 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 213

K-12 TEACHER WORKSHOP: PARACELSUS GOES TO THE K-12 CLASSROOM.

Chairperson: Benny L. Blaylock, Northern Louisiana University, Monroe, LA

This special program will be offered again for local K-12 educators and interested SOT members. The main goal of the program is to enhance science education by stimulating ideas for incorporating multidisciplinary toxicology and environmental health science concepts and teaching materials into K-12 classrooms. Lectures and demonstrations will be tailored to the different needs of elementary, middle and high school level classes. This one-day program also includes time for teachers to interact with local SOT toxicologist volunteer mentors, attend scientific sessions and exhibits, and learn how to prepare their students for rewarding careers in toxicology and environmental health sciences.

MONDAY MORNING, MARCH 15
8:30 AM - 9:30 AM
ERNEST N. MORIAL CONVENTION CENTER
LA LOUISIANE BALLROOM

PLENARY LECTURE: WORLDS APART

Lecturer: Dr. Rick Chappell, Vanderbilt University, Nashville, TN

Science and technology are at the heart of our daily lives whether it is concerning personal decisions on health issues, community decisions on protecting the environment or national decisions on investment in research. Americans are very interested in science, yet polls show that the public feels too ill informed about science to make confident decisions. Nowhere is knowledge of science and technology more essential than in areas related to toxicology where personal decisions must become critically important. In this arena, sound scientific knowledge must be communicated effectively to legislators and public alike. Americans depend on the media for this communication but recent experience has shown that science and the media are worlds apart in their mutual understanding and communication. This presents a great challenge to scientists and technologists in trying to build a bridge to the media. As deep as the chasm between the two now is, there are ways in which a bridge can be built. The solution involves efforts by scientists, journalists and gatekeepers alike and will require steps, which will feel somewhat new and different to each group. These steps must be taken, however, because the payoff is critical to our future both as individual citizens and as a nation.

MONDAY MORNING, MARCH 15
9:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION FOR VISITING STUDENTS

Sponsored By: The Education Committee and the Education Subcommittee for Minority Initiatives

Chairpersons: Ruth Billings, Colorado State University, Fort Collins, CO, Mark A. Nelson, University of Arizona, Tucson, AZ, and Jose E Manautou, University of Connecticut, Storrs, CT

This session provides an overview of research in toxicology, featuring posters by minority scientists and others. Participants in the undergraduate student program have the opportunity to discuss research with the presenters and see the diversity within the discipline of toxicology.

9:30 POSTER SESSION FOR VISITING STUDENTS

11:30 LUNCH, SUMMARY AND CLOSING SESSION

MONDAY MORNING, MARCH 15
9:30 AM - 11:45 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R06-R08

INNOVATIONS IN APPLIED TOXICOLOGY SESSION: GENOMIC TECHNOLOGIES AND NEW SCREENING STRATEGIES FOR TOXICOLOGY

Sponsored By: The Regulatory and Safety Evaluation Specialty Section

Chairperson: Mary Jane Cunningham, Incyte Pharmaceuticals, Inc., Palo Alto, CA

New genomic technologies aimed at assessing molecular toxicity may now play a major role in pharmaceutical drug development. These technologies include: a) cDNA and oligonucleotide microarrays, b) the branched DNA (bDNA) assay, c) the scintillation-based mRNA assay, and d) proteomics (protein gel electrophoresis/mass spectrometry). These assays may be used to screen combinatorial chemistry libraries, select drug candidates for further development or study mechanisms of toxicity. Several applications will be presented in the areas of hepatocarcinogenesis, disruption of hormonal signaling by environmental estrogens and comparing gene expression profiles of chemotherapeutic agents and peroxisome proliferators.

1 9:30 GENOMIC TECHNOLOGIES AND NEW SCREENING STRATEGIES FOR TOXICOLOGY. M J Cunningham, Incyte Pharmaceuticals, Inc., Palo Alto, CA.

2 9:40 INTEGRATION OF MOLECULAR TOXICOLOGY INTO THE DRUG DISCOVERY PROCESS. M D Todd, Department of Toxicology, Chiron Corporation, Emeryville, CA. Sponsor: G H I Wolfgang.
Cellular responses to toxins, radiation, and other environmental insults can result in cell cycle arrest, proliferation, differentiation, homeostasis, apoptosis, or necrosis. Checkpoints arrest cell cycle progression before DNA replication (G1 checkpoint) or mitosis (G2 checkpoint) when the integrity of the genome is compromised either as a consequence of DNA damage, perturbed metabolism/signaling, or programmed cellular events such as senescence. Many of these checkpoints are deregulated in cancer. Recent advances in gene-targeted mice that lack these cell cycle regulators, p21(waf1/cip1) and p27kip1 cyclin-dependent kinases (CDK) inhibitors showed the important functions of p21 in G1 checkpoint and p27 in replicative capacity of differentiation-associated cell divisions. Furthermore, after hepatic toxicant carbon tetrachloride-induced liver cell death and regeneration, p21 CDK inhibitor showed two waves of expression. The first occurred in the damaged pericentral region, in conjunction with early proto-oncogene expression, the second occurred later, consistent with post-mitotic expression after regeneration was completed. The persistent effects of radiation- or xenobiotic-induced DNA damage on genetic stability and fitness in yeast appeared in the progeny of survivors as many as 50 generations after exposure, implying mechanisms other than carry-over DNA damage or mutations at specific loci. Integration of signaling transduction pathways in response to cellular stress is critical for cell survival or death. Various chemicals can induce differential activation of the mitogen-activated protein kinases (MAPK) and ICE/Ced-3 proteases (caspases). Studies with phenolic compounds showed that low concentrations activated MAPK leading to gene expression and cell survival, whereas higher concentrations activated caspases leading to apoptosis. In summary, this symposium will focus on the cell cycle checkpoints, genetic stability, cell death and cell survival. The information from this symposium may be of importance in assessing the potential risks of environmental toxicants leading to cellular injury.
overcome these problems, sophisticated assessment tools have been developed to assess selected aspects of complex brain function (cognition) and their alteration by toxicant exposure. Improvement of the interpretation of animal cognitive function tests has resulted from data generated from carefully designed operant and non-operant problem solving tasks, especially those that can be modeled in both animals and humans. These include delayed matching to sample (short-term memory); repeated acquisition (learning); temporal discrimination (timing ability); and progressive ratio (motivation). Interpretation of cognitive test results in exposed humans with respect to causation is enhanced by consistency with results from animal species. Challenges still remain regarding interpretation of results with respect to adversity of effect. This workshop will discuss: the range of cognitive tests available; their use and reliability in different species for predicting neurotoxicity; and the appropriate interpretation of such tests with respect to overall function, including whether an effect is adverse or not.


#12 9:40 ASSESSMENT OF COMPLEX COGNITIVE FUNCTION IN RODENTS AND EXTRAPOLATION ACROSS SPECIES. D A Cory-Slechta. Department of Environmental Medicine, University of Rochester Medical School, Rochester, NY.


#14 10:40 ASSESSING THE EFFECTS OF NEUROTOXICANTS ON CHILDREN’S COGNITION. D Bellinger. Children’s Hospital, Boston, MA. Sponsor: W Slikker, Jr.

#15 11:10 HUMAN NEUROBEHAVIORAL TEST METHODS FOR STUDYING NEUROTOXICITY IN WORKING POPULATIONS. W K Anger, D S Rohman and D Storzbach. Oregon Health Science University, Portland, OR.

For many years, inorganic fibers have been viewed with suspicion as potential pulmonary toxins. However, extensive new research reveals that inorganic fibers encompass a broad range of biological reactivity, from inocuous to pathogenic. The fibrous shape is problematic in that it permits penetration into the lower lung of very long particles that cannot be fully phagocytized and cleaved by macrophages. If the fiber contains a high proportion of soluble components, it quickly dissolves in the lung environment and thus has little time to induce toxicity. Research suggests that only those fibers that persist in the lung can lead to disease. In contrast to asbestos, synthetic vitreous fibers chemically and physically degrade in the lung relatively quickly, with the new generation of vitreous fibers clearing from the lung within weeks or days. This workshop focuses on fiber biopersistence as a determinant and predictor of fiber toxicity and examines the possible mechanisms of biopersistence, including dissolution rate. Fiber biopersistence research is also discussed as the scientific basis for fiber classification schemes adopted by the European Union and Germany and those that are currently being developed in the US.

#16 9:30 RELATIONSHIPS BETWEEN BIOPERSISTENCE, IN VITRO DISSOLUTION RATE AND FIBER TOXICITY. D M Bernstein1 and T W Hesterberg2. 1Consultant in Toxicology, Geneva, Switzerland; 2Johns Manville Corporation, Littleton, CO.

#17 9:50 SCIENTIFIC BASIS OF BIOPERSISTENCE METHODS TO CHARACTERIZE THE CARCINOGENIC POTENTIAL OF FIBERS. G Oberdörster. University of Rochester, Department of Environmental Medicine, Rochester, NY.

#18 10:10 THE BIOPERSISTENCE OF SYNTHETIC VITREOUS FIBERS: A CRITICAL DETERMINANT OF THE BIOLOGICAL ACTIVITY OF FIBERS. J G Hadley and W Eastes. Owens Corning Science and Technology Center, Granville, OH.

#19 10:30 IMPORTANCE OF THE BIOPERSISTENCE OF MINERAL FIBERS TO FIBER TOXICITY. H Mühle, B Bellmann and O Creutzenberg. Fraunhofer Institute of Toxicology and Aerosol Research, Hannover, Germany.

#20 10:50 COMPARISONS OF LUNG CLEARANCE MECHANISMS OF TWO ORGANIC FIBER-TYPES: IN VITRO AND IN VIVO MECHANISTIC STUDIES. D B Warheit. DuPont Haskell Lab, Newark, DE.

SOCIETY OF TOXICOLOGY
38th Annual Meeting

MONDAY MORNING, MARCH 15
9:30 AM - 11:45 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 206

POSTER DISCUSSION SESSION: IMMUNOTOXICITY: MODULATION OF T CELL RESPONSES AND HOST RESISTANCE

Chairpersons: B. Paige Lawrence, Washington State University, Pullman, WA and Robert W. Luebbeke, US EPA, Research Triangle Park, NC

Displayed: 9:30 AM - 11:45 AM

Discussed: 10:30 AM - 11:45 AM

#21 EFFECTS OF LEAD ON CELLULAR AND HUMORAL IMMUNE RESPONSE OF ENVIRONMENTALLY EXPOSED CHILDREN. A Pineda-Zavaleta, G Garcia-Vargas, A Gómez-Muñoz, V H Borja-Aburto, E Vera, M E Cebrián and E S Calderón-Aranda. Sección de Toxicología Ambiental, CINVESTAV IPN, México DF.

#22 EMBRYONIC EXPOSURE TO LEAD MODULATES TH1/TH2 ASSOCIATED IMMUNE FUNCTIONS AND IS INFLUENCED BY DEVELOPMENTAL STATUS. S Chen, K A Golomboski and R R Diezert. Institute of Comparative and Environmental Toxicology, Department of Microbiology and Immunology, College of Veterinary Medicine, Cornell University, Ithaca, NY.

#23 MERCURY: EFFECTS ON IMMUNE RESPONSE IN MICE MAY INVOLVE GLUTATHIONE DEPENDENT MECHANISMS. E K Silbergeld1,2, W Huang1, J L Powell3, A Azad4, J Sacch4,5. 1Program in Human Health and the Environment, 2Program in Toxicology, 3Hospital Epidemiology, 4 Department of Microbiology and Immunology, University of Maryland Medical School, Baltimore, MD; and 5NIMHNI, US Navy, Bethesda, MD.

#24 EFFECTS OF IN VIVO EXPOSURE TO HEXACHLOROBENZENE AND TRICHINELLA SPIRALIS INFECTION ON CYTOKINE EXPRESSION AND PRODUCTION BY CULTURED SPLENOCYTES FROM LEWIS AND BROWN NORWAY RATS. H Van Loveren1, C Meredith2, M P Scott2, M E A Van Dijk1 and R J Vandenbel1. 1Laboratory for Pathology and Immunobiology, RIVM, Bilthoven, NL; 2Immunotoxicology, BIBRA, Carshalton, UK.

#25 AFLATOXIN B1 EXPOSURE IMPAIRS HOST RESISTANCE THROUGH DEFECTS IN MACROPHAGE DERIVED CYTOKINE PRODUCTION. K E Jordan, M Wills-Karp and G J Jakab. Division of Toxicological Sciences, Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD.

#26 IMMUNOTOXICITY TESTING: A COMBINED LISTERIA IMMUNIZATION/INFECTION MODEL IN WISTAR RATS. S Spanhak, A Laaman and A H Penninks. TNO Nutrition and Food Research Institute, Zeist, The Netherlands. Sponsor: B Kulig

#27 A MOUSE MODEL OF INFLUENZA EXHIBITS INCREASED MORBIDITY, MORTALITY AND THYMIC ATROPHY ASSOCIATED WITH ALTERED LUNG CYTOKINE PATTERNS FOLLOWING EXPOSURE TO MILD ULTRAVIOLET RADIATION (UVR). L K Ryan, L Bishop, M Daniels, M I Gilmour, Y S Huang, M Ward, W Dong and M J K Selgrade. US EPA, NHEERL, Immunotoxicology Branch, Research Triangle Park, NC.

#28 SUPPRESSION OF ALLERGIC IMMUNE RESPONSES TO HOUSE DUST MITE (HDM) IN RATS EXPOSED TO 2,3,7,8-TCDD. R W Luebbeke1, C B Copeland1, M Daniels1, A L Lambert2 and M I Gilmour1. 1Experimental Toxicology Division, US EPA, Research Triangle Park, NC; 2Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#29 EXPOSURE TO TCDD SUPPRESSES THE RECRUITMENT OF T CELLS TO THE LUNGS OF C57BL/6 MICE INFECTED WITH INFLUENZA VIRUS. B P Lawrence and T K Warren. Department of Pharmaceutical Sciences, College of Pharmacy, Washington State University, Pullman, WA.

#30 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) DIFFERENTIALLY ALTERS THE COURSE OF LEISHMANIASIS IN RESISTANT AND SUSCEPTIBLE MICE. G K Dekrey and R G Titus. Colorado State University, Fort Collins, CO.

#31 ABILITY OF SPLENIC DENDRITIC CELLS (DC) FROM 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD)-TREATED MICE TO INDUCE T CELL ACTIVATION EX VIVO. B A Verderstrasse and N J Kerkvliet. Department of Environmental and Molecular Toxicology and Environmental Health Science Center, Oregon State University, Corvallis, OR.
MONDAY MORNING, MARCH 15
9:30 AM - 12:30 PM
ERNST N. MORAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION. REACTIVE INTERMEDIATES

Chairpersons: Timothy R. Fennell, CIIT, Research Triangle Park, NC and Jose E. Manautou, University of Connecticut, Storrs, CT

Displayed: 9:30 AM - 12:30 PM

Attended: 9:30 AM - 11:00 AM

#32 LIVER PROTEIN ADDUCTS OF QUINONES AND SEMIQUNONES FROM METABOLIC ACTIVATION OF PENTACHLOROPHENOL. C H Tsai, P H Lin, S Waidyanatha and S M Rappaport. Department of Environmental Sciences & Engineering, School of Public Health, UNC, Chapel Hill, NC. Sponsor: J Swenberg.


#34 IDENTIFICATION OF A NOVEL 210 KDa PLASMA MEMBRANE PROTEIN ARYLATED BY ACETAMINOPHEN IN MOUSE LIVER. J E Manautou, C Chen1 and D J McCann2. 1Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT; 2Drug Disposition and Metabolism Department, Zeneca Pharmaceuticals, Wilmington, DE.

#35 A COMPARISON OF THE COVALENT BINDING OF VERSEINORONE AND CLOZAPINE TO HUMAN NEUTROPHIL POLYPEPTIDES IN VITRO. I Gardner, N Zahid and J Uetrecht. Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada.

#36 METABOLISM OF TRIMETHOPRIM BY ACTIVATED HUMAN NEUTROPHILS AND RAT LIVER MICROSOMES: IMPLICATIONS FOR TRIMETHOPRIM-INDUCED AGRANULOCYTOSIS AND LIVER TOXICITY. W G Lai, N Zahid and J P Uetrecht. Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada.

#37 COVALENT BINDING SITES OF CLOZAPINE IN HUMAN NEUTROPHILS IN VITRO DETECTED BY CONFOCAL AND ELECTRON MICROSCOPY. J H Zhan, I Gardner1 and J P Uetrecht1,2. Faculties of 1Pharmacy and 2Medicine, University of Toronto, Toronto, Ontario, Canada.

#38 INHIBITION OF GLUTATHIONE S-TRANSFERASES BY REACTIVE METABOLITES OF BUTYLATED HYDROXYTOLUENE. J-N Lemercier, J P Desjardins and J A Thompson. University of Colorado Health Sciences Center, Denver, CO.

#39 GLUTATHIONE CONJUGATION OF ELECTROPHILIC METABOLITES OF 1-NITRONAPHTHALENE IN RAT. TRACHEOBRONCHIAL AIRWAYS AND LIVER, IDENTIFICATION BY MASS SPECTROMETRY AND PROTON NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY. C C Wat1, D M Morin1, M J Kurfth2, R S Mercer3, C G Flopper4 and A R Buckett5. 1Department of Molecular Biosciences, School of Veterinary Medicine, 2Department of Chemistry, 3Facility for Advanced Instrumentation; and 4Department of Anatomy, Physiology and Cell Biology, University of California, Davis, CA.

#40 FORMATION OF 1,1-DICHLOROETHYLENE EPOXIDE IN CENTRIBULBAR HEPATOCYTES OF MURINE LIVER. P G Fokker and K Collins. Department of Anatomy and Cell Biology, Queen's University, Kingston, Ontario, Canada.

#41 CYP2F1 KINETIC STUDIES WITH DEUTERATED ANALOGS OF 3-METHYLMIDOLINE REVEAL MECHANISMS OF DEHYDROGENATION TO 3-METHYLENEDINDOLE. C R Borges and G S Yost. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#42 DOSE-DEPENDENT PROTEIN ADDUCT FORMATION IN RATS AND HUMANS AFTER PERCHLOROETHENE INHALATION. A Pahler1, J Parker2 and W Dekam3. 1Institut für Toxikologie, Universität Würzburg, Germany; 2US EPA, NCEA, Washington, DC.


#44 N-ACETYLBENZIDINE PEROXYGENASE METABOLISM BY PROSTAGLANDIN H SYNTHASE. T V Zenser1, V Lakshmi1, F Hsu2 and B Davis1. 1VA Medical Center, St. Louis, MO; 2Washington University, St. Louis, MO.
AN NMR ANALYSIS OF THE REACTION OF UBIQUITIN WITH [ACETYL-1-13C] ASPIRIN J M MacDonald1, D A LeBlanc1, A L Haas3, R E London1, 1NIEHS, Research Triangle Park, NC; 2Medical College of Wisconsin, Department of Biochemistry, Madison, WI.

HEMOGLOBIN ADDUCT DOSIMETRY OF ACRYLONITRILE FOLLOWING CHRONIC ADMINISTRATION IN THE MOUSE. T R Fennell1, J P MacNeela1, M J Turner, Jr1, D G Seraf1 and B Ghanayem3, 1Chemical Industry Institute of Toxicology, Research Triangle Park, NC, 2Southern Research Institute, Birmingham, AL; 3NIEHS, Research Triangle Park, NC.

COMPARATIVE BIOAVAILABILITY OF BENZ[α]PYRENE IN RATS DOSED ORALLY VS. INHALATION. A Ramesh, F Inyang, M Greenwood, A Archibong, M E Knuckles and D B Hood. Department of Pharmacology, Meharry Medical College, Nashville, TN.

ESTIMATES OF THE IN VITRO PERCUTANEOUS ABSORPTION OF TWO PAH CONTAMINATED SOILS AND THEIR ORGANIC EXTRACTS. E C Lonardo1, D A Edwards1, T Aruta2, L Raciopp2, 1Exxon Biomedical Sciences, Inc., East Millstone, NJ; 2NIEHS, Linden, NJ.

COMPARATIVE ANALYSIS OF CHEMICAL-DNA ADDUCT FORMATION IN MOUSE LUNG FOLLOWING THE INGESTION OF NEAT MGP TAR AND SOILS CONTAMINATED WITH MGP TAR. A Koganti, D A Spina, B-L Ma, R Singh, A Koganti, K Rozett and E H Weyand. College of Pharmacy, Rutgers-The State University of New Jersey, Piscataway, NJ.


BENZ[α]PYRENE BIOAVAILABILITY FROM RESIDENTIAL SOILS. B H Magee1, D D Dolan2, D A Paley2 and E H Weyand3, 1Ogden Environmental & Energy Services, Westford, MA; 2AlliedSignal Inc., Morristown, NJ; 3Rutgers, The State University of New Jersey, Piscataway, NJ.

TRANSFER OF SPERMATOZOA BENZ[α]PYRENE-DNA ADDUCTS TO FERTILIZED EGCs ASSOCIATED WITH EMBRYOTOXICITY. S B Hooser1, W M Baird2, L J Schild2 and G U Leel1, 1Purdue University, Department of Vet Pathobiology, W. Lafayette, IN; 2Oregon State University, Environmental Health Sciences Center, Corvallis, OR.

QUALITATIVE AND QUANTITATIVE CHARACTERIZATION OF 7,12-DIMETHYLBENZ[α]ANTHRACENE (DMBA) HEMOGLOBIN (HB) ADDUCTS. S R Myers1, C J Grubbs2 and R A Lubet3, 1Department Pharmacology and Toxicology, University of Louisville School of Medicine, Louisville, KY; 2Department Nutritional Sciences, University Alabama Birmingham, Birmingham, AL; and 3DCPC, NCI, NIH, Bethesda, MD.
THE EFFECT OF A COMPLEX MIXTURE OF POLYCYCLIC AROMATIC HYDROCARBONS (PAH) ON PAH ACTIVATION. C P Marston and W M Baird. Oregon State University, Corvallis, OR.

PURIFICATION SCHEME FOR A POLYCYCLIC HYDROCARBON-BINDING PROTEIN FROM RAINBOW TROUT LIVER CYTOSOL. K A Closey and L R Curtis. Department of Environmental Health, East Tennessee State University, Johnson City, TN.

EFFECTS OF ACENAPHTHENE, ACENAPHTHYLNE AND 1,2,5,6-DIBENZANTHRACENE ON IMMUNE FUNCTIONS AND CYP450 IN ADULT MALE DEER MICE (PEROMYSCUS MANICULATUS). A B Bodine1, M M Peden-Adams2, S Kuntecon1, J Dancik2, R L Dickerson3 and J Liu1.1Department of Animal and Veterinary Science, Clemson University, Pendleton, SC; 2Department of Environmental Toxicology, Clemson University, Pendleton, SC; 3The Institute of Environmental and Human Health, Texas Tech U/TTU Health Sciences Center, Lubbock, TX.

ALTERATIONS IN IMMUNE FUNCTION AND CYP450 ACTIVITY OF ADULT MALE DEER MICE FOLLOWING EXPOSURE TO EITHER CHRYSENE, PYRENE, OR BENZ[α]PYRENE. M M Peden-Adams, J Liu1, J Dancik1, S Kuntecon1, A B Bodine1, 2, and R L Dickerson2.1Department of Environmental Toxicology, Clemson University, Pendleton, SC; 2Department of Animal and Veterinary Sciences, Clemson University, Clemson, SC; 3The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX.

POTENTIATION OF DNA ADDUCT FORMATION IN RAT LIVER AND LUNG SLICES INCUBATED WITH BENZ[α]PYRENE (BAP) IN DYNAMIC ORGAN CULTURE FOLLOWING PRETREATMENT WITH 2,3,7,8- TETRAChlorODIBENZO-p-DIOXIN (TCDD) IN VIVO. J A Hand1, B P McGarrigle1, A E Maceubbin2 and J R Olson1.1Department Pharm. Toxicol., SUNY at Buffalo, Buffalo, NY; 2Department Pharm., Roswell Park Cancer Institute, Buffalo, NY.

LIGHT-INDUCED FORMATION OF BENZ[α]PYRENE QUINONES: ROLE IN ALTERED CALCIUM HOMEOSTASIS IN HUMAN MCF10A MAMMARY EPITHELIAL CELLS. M D Reed1, J S Seagrave2, S P Materle1, J L Born1 and S W Burchiel1.1The University of New Mexico, College of Pharmacy, Toxicology Program and the 2Lovelace Respiratory Research Institute, Albuquerque, NM.

2,3,7,8- TETRACHLORODIBENZO-p-DIOXIN AND BENZ[α]PYRENE DIFFERENTIALLY REGULATE CELL ATTACHMENT AND EXPRESSION OF EPIDERMAL GROWTH FACTOR RECEPTOR, E-CADHERIN AND PROSTAGLANDIN H-SYNTHASE IN HUMAN UTERINE ENDOMETRIAL CELLS. M A McGarry, G D Charles, T Modrano, M Campbell-Thompson and K T Shiverick. Departments of Pharmacology and Therapeutics and Medicine, University of Florida, Gainesville, FL.

ESTRADIOL ENHANCES THE EFFECT OF 2,3,7,8- TETRAChlorODIBENZO-p-DIOXIN ON 7-EthOXYRESORUFIN-O-DEETHYLASE (EROD) ACTIVITY IN A MOUSE OVARIAN EPITHELIAL CANCER CELL LINE. D-S Son1,2, K F Roby3, K K Rozman4,6 and P F Terranova1,2,5.1Center for Reproductive Sciences; 2Departments of Molecular & Integrative Physiology; 3Anatomy & Cell Biology; 4Pharmacology, Toxicology & Therapeutics; 5Obstetrics & Gynecology, University of Kansas Medical Center, Kansas City, KS; 6Section of Environmental Toxicology, GSF-Institut für Toxicologie, Neuherberg, Germany.

ESTROGEN RECEPTOR-MEDIATED ACTIVITIES OF BENZ[α]PYRENE: RECEPTOR BINDING, INDUCTION OF GENE EXPRESSION AND UTEROTROPHIC EFFECTS. K C Pertuck, J B Matthews, J H Clemons, M R Fielden and T R Zacharewski. Department of Biochemistry and National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

METABOLISM AND RECEPTOR BINDING OF ANTIESTROGENIC POLYCYCLIC AROMATIC HYDROCARBONS. K F Arcaro1, Y Yang2 and J F Gierthy1,2.1School of Public Health, State University of New York at Albany, Albany, NY; 2Wadsworth Center, New York State Department of Health, Albany, NY. Sponsor: L S Kaminsky.

HUMAN PROSTATE CANCER LNCaP CELLS DERIVED FROM LOW AND HIGH PASSAGE NUMBERS DISPLAY DIVERGENT EXPRESSION OF CYPIA1 IN RESPONSE TO BENZ[α]PYRENE. V G Samedi1, T I Modrano1, S Devereaux1, L Rice2, P Narayan2 and K T Shiverick1. Departments of 1Pharmacology and Therapeutics and 2Surgery, Division of Urology, College of Medicine, University of Florida, Gainesville, FL.

REPAIR OF DNA LESIONS: RELATIVE EFFICIENCIES OF REPAIRING POLYCYCLIC AROMATIC HYDROCARBON ADDUCTS IN HUMAN CELL-FREE EXTRACTS. E K Braithwaite, X Wu and Z Wang. University of Kentucky, Lexington, KY.
ANALYSIS OF THE SUBCELLULAR DISTRIBUTION AND CYTOTOXICITY OF BENZO[AL]PYREN in R rat LIVER CELLS. R Barchi, K Ramos, S H Safe, T D Phillips and R C Burghart. Faculty of Toxicology, Texas A&M University, College Station, TX.


MONDAY MORNING, MARCH 15
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: DEVELOPMENTAL TOXICOLOGY I

Chairpersons: Ceinwen A. Schreiner, Mobil Business Resources Corporation, Paulsboro, NJ and Stephen B. Harris, Stephen B. Harris Group, San Diego, CA

Displayed: 9:30 AM - 12:30 PM

Attended: 9:30 AM - 11:00 AM

THE DOUBLE-STAINING OF RAT FETAL SKELETONS USING ALIZARIN RED S AND ALCIAN BLUE IN AN INDUSTRIAL LABORATORY. A D Young, D E Phipps and A B Astroff. Bayer Corporation, Agriculture Division, Toxicology Department, Stillwell, KS.

DEVELOPMENTAL TOXICITY STUDY OF PENTANENITRILE, 3-AMINO (3-APN) IN RATS. S M Munley, M E Hurst, G L Kennedy. DuPont Haskell Laboratory, Newark, DE.

DEVELOPMENTAL NEUROTOXICITY SCREEN - A COMBINED DEVELOPMENTAL TOXICITY ASSESSMENT WITH RATS FROM A MULTI-GENERATION REPRODUCTION STUDY. R G Gilmore, K J Freshwater, A B Astroff and L P Sheets. Bayer Corporation, Agriculture Division, Toxicology, Stillwell, KS.

DEVELOPMENTAL TOXICITY OF SELENOXOL® SOLVENT BY CUTANEOUS DOSSING OF CD® RATS. H W Leung and T R Tyler. Union Carbide Corporation, Danbury, CT.

DEVELOPMENTAL TOXICITY OF STRUCTURALLY RELATED DISUBSTITUTED HALOACETIC ACIDS IN EMBRYO CULTURE. J E Andrews, J Schmidt, H Nichols, E S Hunter, and G Klinefelter. 1Reproductive Toxicology Division, 2Research Support Division, NHEERL, US EPA, Research Triangle Park, NC.


THE EFFECTS OF PERINATAN TEBUCONAZOLE EXPOSURE ON ADULT NEUROLOGICAL, IMMUNOLOGICAL AND REPRODUCTIVE FUNCTION IN RATS. V C Moser, R C MacPhail, R J Smialowicz, M W Harris, and R E Chapin. 1NHEERL/US EPA; 2NTP/NIEHS, Research Triangle Park, NC.


FREE RADICAL-MEDIATED OXIDATIVE DNA DAMAGE IN THE MECHANISM OF THALIDOMIDE TERATOGENICITY. T Parman, M J Wiley, and P G Wells. 1Faculty of Pharmacy and Departments of Anatomy and Pharmacology, University of Toronto, Ontario, Canada.

DEVELOPMENTAL CAR DiOTOXICITY OF BETA-ADRENERGIC AGONISTS: UNIQUE RECEPTOR SIGNALING MECHANISMS. J L Zeiders, F J Seidler and T A Stokli. Duke University Medical Center, Durham, NC.

EFFECTS OF ACETAMINOPHEN ON PREIMPLANTATION EMBRYO GLUTATHIONE CONCENTRATION AND DEVELOPMENT IN VIVO. D N Laub, N M Elmagbari, N O Elmagbari and C S Gardiner. Department of Biological Sciences, University of Northern Colorado, Greeley, CO.
GLUCOSE-6-PHOSPHATE DEHYDROGENASE (G6PD): EMBRYONIC GENOTYPE AND PHENOTYPE CONTROL TERATOLOGIC SUSCEPTIBILITY TO ENDOGENOUS OXIDATIVE STRESS AND PHENYTOIN. C J Nicoll, J Zielenski, L-C Tsai, and F G Wells. Depts. of Pharmacology, University of Toronto and 2Genetics, Hospital for Sick Children and 3Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada.

THE STRESS GENE HSP90 FUNCTIONS IN NORMAL VERTEBRATE MEIOGENESIS, IN ADDITION TO ITS FUNCTION AS AN INDICATOR OF BIOLOGICAL STRESS. J B Sass, P H Krones. 1University of Maryland, Program in Human Health and the Environment, Baltimore, MD; 2University of Saskatchewan, Department of Anatomy and Cell Biology, Saskatoon, Canada. Sponsor: E K Silbergeld.


ENDOTHELIN-A RECEPTOR ANTAGONISM PRODUCES DEFECTS OF NEURAL CREST-DERIVED TISSUES IN WHOLE EMBRYO CULTURE. K C Brannen, E S Hunter HII and J M Rogers. 1Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 2Reproductive Toxicology Division, NHEERL, US EPA, Research Triangle Park, NC.

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY IN RATS TREATED ORALLY WITH 2-AMINO-6-CHLOROPURINE. F J Guerriero, C W Seaman, G L Sprogue, T J Sutton and E Wood. 1SmithKline Beecham Corporation, King of Prussia, PA; 2SafePharm Laboratories Limited, Derby, UK.

TERATOLOGICAL RELEVANCE OF EMBRYONIC GENOTYPE IN BENZO[A]PYRENE (B[a]P)-TREATED KNOCKOUT MICE. P G Wells, C J Nicoll, and M J Wiley. Faculty of Pharmacy and Departments of Pharmacology, Anatomy and Cell Biology, University of Toronto, Toronto, Ontario, Canada.

PROTEIN KINASE C ONTOGENY IN THE DEVELOPING PALATE AND THE EFFECT OF SECALONIC ACID-D ON ITS EXPRESSION IN MICE. G Balasubramanian and C S Reddy. Department of Veterinary Biomedical Sciences, University of Missouri, Columbia, MO.

DEVELOPMENTAL, PHYSIOLOGICAL AND CHEMICAL REGULATION OF RAT HEPATIC STEROID SULFATASE. D P Hartley, D Max and C D Klaassen. University of Kansas Medical Center, Kansas City, KS.

DEVELOPMENTAL ANALYSIS OF GENE EXPRESSION IN THE MALE REPRODUCTIVE TRACT DURING IN UTERO EXPOSURE TO DI-(n-BUTYL) PHTHALATE. V D Shultz, E Mylchreest, P M D Foster and K W Gaido. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

DI-(n-BUTYL) PHTHALATE INDUCES CHANGES IN MORPHOLOGY AND ANDROGEN RECEPTOR LEVELS IN THE FETAL TESTIS. M Sar, E Mylchreest, D G Wallace, R C Cuttleby, and P M D Foster. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

TOXIC RESPONSES OF MEDAKA (d-R STRAIN) TO POLYCHLORINATED NAPHTHALENE (PCN) MIXTURES AFTER EMBRYONIC EXPOSURE BY IN OVO NANOINJECTION: A PARTIAL LIFE CYCLE ASSESSMENT. S A Villalobos, D M Papoulias, J Meadows, A L Blankenship, S D Pastva, K Kannan, D E Tillitt, J P Giesy. 1Toxicology Department, National Food Safety and Toxicology Center, Institute of Environmental Toxicology, Michigan State University, East Lansing, MI; 2Environmental and Contaminants Research Center, USGS, Columbia, MO.

EFFECTS OF DEVELOPMENTAL EXPOSURE TO AROCLOR® 1254 ON LEARNING AND SUSTAINED ATTENTION IN RATS. W M Osbom, P J Bushnell and P R S Kodavanti. Neurotoxicology Division, National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC.

PERINATAL EXPOSURE TO AROCLOR® 1254 SUPPRESSES THE ONGOGENETIC PEAK OF MOTOR ACTIVITY IN LONG-EVANS RATS. A S Driver, 1,2, H A Tison 2 and R C MacPhail 2. 1University of North Carolina at Chapel Hill, Chapel Hill, NC; 2Neurotoxicology Division, NHEERL, US Environmental Protection Agency, Research Triangle Park, NC.

PERINATAL EXPOSURE TO AROCLOR® 1254 ALTERS MOTOR ACTIVITY IN ADULT LONG-EVANS RATS CHALLENGED WITH NICOTINE. H A Tison, R C MacPhail, A S Driver 1,2. 1Neurotoxicology Division, NHEERL, US Environmental Protection Agency, Research Triangle Park, NC; 2University of North Carolina at Chapel Hill, Chapel Hill, NC.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

MONDAY, MARCH 15
9:30 AM - 12:30 PM
ERNST M. MORAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION 4: MIXTURES

Chairpersons: Jane E Simmons, US EPA, Research Triangle Park, NC and Joel G. Pounds, Wayne State University, Detroit, MI

Displayed: 9:30 AM - 12:30 PM

Attended: 11:00 AM - 12:30 PM

#103 DOSE-DEPENDENT INTERACTION OF SIMPLE CHEMICAL MIXTURES, J P Pounds\textsuperscript{1}, P L Pokorski\textsuperscript{1}, D G Chen\textsuperscript{2} and M Muntaz\textsuperscript{3}; \textsuperscript{1}Institute of Chemical Toxicology, Wayne State University, Detroit, MI; \textsuperscript{2}Pacific Biological Station, Nanaimo, BC, Canada; and \textsuperscript{3}Division of Toxicology, ATSDR, P.H.S., Atlanta, GA.

#104 DEVELOPMENT OF ISOBOLOGAMS FOR THE ACUTE LETHAL INTERACTION OF PYRIDOSTIGMINE BROMIDE, PERMETHRIN and DEET IN THE LABORATORY RAT. W C McCain\textsuperscript{1}, M Michie\textsuperscript{1}, J Ferguson\textsuperscript{1}, R Lee\textsuperscript{2} and L Metker\textsuperscript{1}; \textsuperscript{1}Toxicology Directorate, US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD; \textsuperscript{2}Robyn B. Lee and Associates, Fawn Grove, PA.

#105 AN EMPIRICAL APPROACH TO PREDICTING BIOLOGICAL RESPONSES FOLLOWING EXPOSURES TO MIXTURES. M G Ménache\textsuperscript{1}, R C Graham\textsuperscript{2}, M DeVito\textsuperscript{3} and LS Birnbaum\textsuperscript{3}; \textsuperscript{1}Lovelace Respiratory Research Institute, Albuquerque, NM; \textsuperscript{2}PPD Pharmaco Inc, Morrisville, NC; \textsuperscript{3}US EPA, Research Triangle Park, NC.

#106 MULTIPLE CHEMICAL EXPOSURES SHOULD ALWAYS BE CONSIDERED BUT MIGHT NOT BE A CONCERN. M M Muntaz, J Risher, H Pohl, A Switen, D Mellard, P Forrester, R Canady and D Abouelnaser; Agency for Toxic Substances and Disease Registry (ATSDR), Atlanta, GA.

#107 SUBCHRONIC TOXICITY OF AIDS COMBINATION THERAPIES 3'-AZIDO-3'-DEOXYTHYMIDINE (AZT) and NITAZOXANIDE (NTZ) IN B6C3F1 MICE. G N Rao\textsuperscript{1}, C D Hebert\textsuperscript{2}, R Fulton\textsuperscript{2} and H D Gilles\textsuperscript{2}; \textsuperscript{1}National Institute of Environmental Health Sciences, Research Triangle Park, NC; \textsuperscript{2}Southern Research Institute, Birmingham, AL.
#108 ALTERATIONS IN EXPRESSION OF TGFα, TGFβ, and C-MYC IN HUMAN KERATINO CYTES EXPOSED TO ARSENIC OR A CHEMICAL MIXTURE OF FOUR METALS. D Bae, J A Campain and R S H Yang. Center for Environmental Toxicology and Technology, Department of Environmental Health, Colorado State University, Fort Collins, CO.

#109 DIFFERENTIAL TOXICITY OF ARSENIC, CADMIUM, CHROMIUM AND LEAD SINGLY AND IN COMBINATION IN HUMAN KERATINOCYTES. J A Campain, D Bae, J C Rastatter and R S H Yang. Center for Environmental Toxicology and Technology, Department of Environmental Health, Colorado State University, Fort Collins, CO.

#110 THE EFFECT OF MIXING RATIO ON THE HEPATOTOXICITY OF MIXTURES OF TRIHALOMETHANE (THM) DISINFECTION BYPRODUCTS. A McDonald¹, C Gennings², W Hartley³, L K Teuschler⁴, A Tuyayagataji², Y M Sey⁵, S W Kraener³ and J E Simmons¹. ¹NEERL, US EPA, Research Triangle Park, NC; ²MCP, VCU, Richmond, VA; ³Tulane University Medical Center, New Orleans, LA; ⁴NCEA, US EPA, Cincinnati, OH; ⁵MDSC, La Verne, CA.

#111 CO-EXPOSURE TO EPICHLOROHYDRIN ON THE ELIMINATION OF URINARY METABOLITES OF DIMETHYLMORPHANIDE. M J W Chang and C Y Ko. Chang Gung University, Tao-Yuan, Taiwan.

#113 NEPHROTOXIC AGENTS AND EXTRACELLULAR MATRIX PROTEINS INHIBIT CELL PROLIFERATION OF RENAL PROXIMAL EPITHELIAL CELLS UNDERGOING GROWTH FACTOR-INDUCED BRANCHING TUBULogenesis R C Bowes III. Department of Pharmaceutical Sciences, Campbell University of Pharmacy, Buies Creek, NC.

#114 GLYCINE, STRYCHNINE, MUSCIMOL AND THAPSIGARGIN BLOCK INCREASES IN CYTOSOLIC FREE Ca²⁺ LEVELS IN RENAL CELL INJURY. J F Harriman, X Liu, J H Moran and R G Schnellmann. Department of Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

#115 CYTOTOXICITY OF 4 AMINOPHENOL IN LLC-PK¹ CELLS. M Hallman, R Tchao and J B Tarloff. Department of Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA.

#116 EXAGGERATED PHARMACOLOGY OF THE ORALLY ACTIVE IRON CHELATOR ICL 670 IN THE KIDNEY. C Lorez¹, U Schramm¹, H Thomas¹, W E Trommer² and A Wolf¹. ¹Novartis Pharma AG, Experimental Toxicology, Basel, Switzerland; ²University of Kaiserslautern, Germany. Sponsor: A De Brugeolle de Fraiseittine.

#117 INVESTIGATION OF VANCOMYCIN (VAN)-INDUCED RENAL REGENERATION: ROLE OF GROWTH FACTORS. D W King and M A Smith. Toxicology Program, University of Texas School of Public Health, Houston, TX.

#118 INHIBITION OF CELLULAR RESPIRATION IN NONPERMEABILIZED LLC-PK¹ CELLS: A POSSIBLE MECHANISM FOR PENTAMIDINE NEPHROTOXICITY. R L Baty and M A Smith. Toxicology Program, University of Texas Graduate School of Biomedical Sciences and University of Texas School of Public Health, Houston, TX.

#119 MODULATION OF THE PERIPHERAL BENZODIAZEPINE (BZD) RECEPTOR AS A POSSIBLE MECHANISM FOR LINDANE (LIN) TOXICITY IN MADIN DARBY CANINE KIDNEY (MDCK) CELLS. A L Stock and M A Smith. Toxicology Program, University of Texas School of Public Health, Houston, TX.

#112 COMPENSATORY HYPTERTROPHY AND CELLULAR FUNCTION AND TOXICITY IN PRIMARY CULTURES OF RAT RENAL CELLS. D A Putt¹, L H Lash¹ and R K Zalups². ¹Department Pharmacology, Wayne State University School Medical, Detroit, MI; ²Div. Basic Medical Sciences, Mercer University School Medical, Macon, GA.

#120 DIFFERENTIAL EXPRESSION OF HSP 70A, B AND C GENES IN HUMAN PROXIMAL TUBULE CELLS IN RESPONSE TO STRESS. S Somji, J H Todd, S H Garrett and D A Sens. Department of Pathology, West Virginia University, Morgantown, WV.

MONDAY MORNING, MARCH 15
9:30 AM - 12:30 PM
ERNST L. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: KIDNEY

Chairpersons: Joan B. Tarloff, University of the Sciences in Philadelphia, Philadelphia, PA and Monica Valenovic, Marshall University School of Medicine, Huntington, WV

Displayed: 9:30 AM - 12:30 PM

Attended: 9:30 AM - 11:00 AM
HEAT SHOCK PROTEIN 27 IS INCREASED IN HUMAN PROXIMAL TUBULES CELLS BY ACUTE, BUT NOT CHRONIC, LETHAL EXPOSURE TO CdCl₂. J H Toddo, S Somji, S H Garrett and D A Sens. Department of Pathology. West Virginia University, Morgantown, WV.


NEPHROTOXICITY ASSESSMENT OF SELECTED POLYCYCLIC AROMATIC HYDROCARBONS. M H Fakhatpsihe and K S Ramor. Department of Veterinary Physiology and Pharmacology and Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

EFFECTS OF TAURINE ANALOGS ON QUINONE FORMATION AND CYTOTOXICITY R Dawson, Jr, S A Messina and D J Salzano. Department of Pharmacodynamics, College of Pharmacy, University of Florida, Gainesville, FL.

TRANSPORT OF CHLOROTRIFLUOROETHYLGLUTATHIONE (CTFG) BY PRIMARY CULTURES OF RABBIT PROXIMAL TUBULAR CELLS (RPTC) AND SUSPENSIONS OF RABBIT PROXIMAL TUBULES. C E Groves and M N Morales. University of Florida, College of Veterinary Medicine, Department of Physiological Sciences, Gainesville, FL.

EFFECTS OF ANTIVIRAL DRUGS Cidofovir AND Foscarnet ON THE SODIUM-GLUCOSE COTRANSPORTER IN CULTURED RABBIT KIDNEY PROXIMAL CONVOLUTED (PCT) AND STRAIGHT (PST) TUBULAR CELLS. P L Del Valle, A Trifillis and A S Kane. Department of Pathology, University of Maryland School of Medicine, Baltimore, MD.

ENDOTOXIN POTENTIATES MERCURY-INDUCED NEPHROTOXICITY. W K Rumbeia¹, S D Fitzgerald¹, R A Roth², W E Braeston² and J J Petkó³. ¹Department of Pathology and the AHDl, ²Department of Pharmacology and Toxicology and ³Department of Food Safety and Human Nutrition, Michigan State University, East Lansing, MI.

EFFECT OF INDUCIBLE NITRIC OXIDE SYNTHASE INHIBITOR L-IMINOETHYL-LYSINE ON RENAL TOXICITY AFTER LIPOPOLYSACCHARIDE ADMINISTRATION. C Zhang and P R Mayoze. University of Arkansas for Medical Sciences, Little Rock, AR.

TOXICITY OF A SEVOFLURANE DEGRADATION PRODUCT TO RAT LIVER AND RENAL CORTICAL SLICES. J M Catania¹, A R Parrish² and A J Gandolfi³. ¹Department of Pharmacology and Toxicology and ²Department of Anesthesiology, University of Arizona, Tucson, AZ.

2-AMINO-5-CHLOROPHENOL (2ASCP) TOXICITY IN RAT RENAL CORTICAL SLICES: EFFECT OF ANTIOXIDANTS. M A Valentinov, J G Ball and G O Rankin. Department of Pharmacology, Marshall University School of Medicine, Huntington, WV.

S-(1,2,3-TRICHLOROVINYL)-L-CYSTEINE SULFOXIDE (TCVCS), A POTENTIAL METABOLITE OF TETRACHLOROETHYLENE (TCE), IS A POTENT NEPHROTOXIN. A A Elfarra, J J Laboy and A J Cooley. School of Veterinary Medicine, University of Wisconsin, Madison, WI.

PHENOALBITAL POTENTIATES N-(3,5-DICHLOROPHENYL)-2-HYDROXY-SUCCINIMIDE (NDHS) AND N-(3,5-DICHLOROPHENYL)-2-HYDROXY-SUCCINAMIC ACID (2-NHSA) NEPHROTOXICITY IN MALE BUT NOT FEMALE FISCHER 344 RATS. G O Rankin, S K Hong, D K Aneis, J G Ball and M A Valentinov. Department of Pharmacology, Marshall University School of Medicine, Huntington, WV.

SODIUM SULFATE POTENTIATES N-(3,5-DICHLOROPHENYL)-2-HYDROXY-SUCCINIMIDE (NDHS) AND N-(3,5-DICHLOROPHENYL)-2-HYDROXY-SUCCINAMIC ACID (2-NHSA) NEPHROTOXICITY IN FISCHER 344 RATS. S K Hong, D K Aneis, J G Ball, M A Valentinov and G O Rankin. Department of Pharmacology, Marshall University School of Medicine, Huntington, WV.

EVIDENCE FOR THE FORMATION OF PHASE II METABOLITES OF N-(3,5-DICHLOROPHENYL) SUCCINIMIDE (NDPS) IN RATS. D Cui¹ and P J Harrison¹. ¹Department of Pharmaceutical Sciences, University of the Sciences in Philadelphia, PA; ²Merck and Company, Inc., West Point, PA.

8-CHLORO-CYCCLIC AMP, BUT NOT 2-FLUORO-8-CHLORO-CYCCLIC AMP IS NEPHROTOXIC IN MICE. A P Brown¹, R L Morrissey², S J Donohue³, B R Vishnuvajjala³, J E Tomaszewski³ and B S Levine¹. ¹University of Illinois at Chicago, Chicago, IL; ²Pathology Assoc. Intl., Chicago, IL; ³National Cancer Inst., Bethesda, MD.
SPECIES DIFFERENCES IN ORTHO-DIPHENOL MEDIATED NEPHROTOXICITY. H H Lo1, T J Monsk1, C Whitman1, T W Jones2 and S S Lau1.
1College of Pharmacy, University of Texas at Austin, TX and 2Lilly Corporate Center, Indianapolis, IN.

FUNCTIONAL, MORPHOLOGICAL AND MOLECULAR ALTERATIONS INDUCED BY BENZO(a)PYRENE IN THE ADULT RAT KIDNEY. N F Alejandro and K S Ramos. Department of Veterinary Physiology and Pharmacology & Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

SENSITIVITY OF MICE TO PHENACETIN TOXICITY IS STRAIN-SPECIFIC. M M Hallock1, F M Poulet1, L E Beebe2, L Reyderman3, P Statkiewicz1, J Y Rosenblum1, M E Cartwright1 and J S MacDonald1. 1Scherering-Plough Research Institute Lafayette, NJ; 2Covance Laboratories, Vienna, VA.


RE-EVALUATION OF THE CHLOROFORM 2-YEAR DRINKING WATER BIOASSAY IN OSBORNE-MENDEL RATS INDICATES THAT SUSTAINED RENAL TUBULE INJURY IS ASSOCIATED WITH RENAL TUMOR DEVELOPMENT. G C Hard1 and D C Wolf2. 1American Health Foundation, Valhalla, NY; 2US EPA, Research Triangle Park, NC.

SEQUENTIAL ANALYSIS OF THE HEPATORENAL TOXICITY AND CADMIUM ACCUMULATION IN RATS GIVEN MINIMUM TO LARGE AMOUNTS OF CADMIUM CHLORIDE FOR 2 YEARS. M Shibutani1, K Mitsumori1, S Sato2, H Onodera1, J Nakagawa3, Y Hayashi4, M Hirose4 and M Ando1. 1National Institute of Health Sciences, Tokyo; 2Ina Research Inc., Nagano; 3Tokyo Metropolitan Research Laboratory of Public Health, Tokyo; 4Kitasato University, Tokyo, Japan. Sponsor: T Shirai.


SUBACUTE INHALATION TOXICITY OF PERFLUOROETHYL VINYL ETHER (PFVE) IN RATS. J R Bamberger, D A Lavoie, G S Elliott, T Chiu and W J Brock. The DuPont Company, Haskel Laboratory for Toxicology and Industrial Medicine, Newark, DE.

CHARACTERIZATION AND EFFECTS OF CRYSTAL DEPOSITS IN RENAL CORTEX AFTER ORAL ADMINISTRATION OF CI-1007 IN MONKEYS. L M King1, M R Feng2, M A Albassam2, J Wright2, K W Baker1, M Sizer2, L Meltzer2, G E Macallum1 and R M Walker1. Parke-Davis Pharmaceutical Research Division, Warner-Lambert Company, 1Mississauga, ON, Canada and 2Ann Arbor, MI.

EFFECT OF RENAL INJURY ON PHOSPHOROTHIOATE OLIGONUCLEOTIDE (P=O DON) PLASMA AND TISSUE DISTRIBUTION AND EXCRETION IN RATS. L Masurian1, A de Peyster1 and D K Monteith2. 1San Diego State University, San Diego, CA; 2Isis Pharmaceuticals, Carlsbad, CA.

EXPRESSION OF METALLOTHIONEIN-3 IN THE HUMAN KIDNEY. D A Sens, S H Garrett, M A Sens, X M Zhang, J H Todd, and S Somji. Department of Pathology, West Virginia University, Morgantown, WV.

NAPROXEN TOXICOSIS IN DOGS: A REVIEW OF FIFTY-SEVEN CASES. S A Khan1, M A Khan2, J C Albretsen1, and S M Gwaltney1. 1ASPCA-National Animal Poison Control Center, 2Department of Veterinary Biosciences, University of Illinois, Urbana, IL.

MONDAY MORNING, MARCH 15
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: NATURAL PRODUCTS

Chairpersons: Ross D. LeClair, US Army; Frederick, MD and David C. McMillan, Medical University of South Carolina, Charleston, SC

Displayed: 9:30 AM - 12:30 PM

Attended: 11:00 AM - 12:30 PM

EFFECTS OF α-HEDERIN ON TCDD-MEDIATED CYPIA EXPRESSION IN THE MOUSE HEPATOMA HEPA 1c17 CELLS. H G Jeong1, S S Lee2, H K Kim1 and C Y Choi1. 1Department of Biological Science, Chosun University, Kwangju, Korea; 2Immune Regulation Research Unit, KRBIB, Taejon, Korea.
MODIFICATION OF FUMONISIN B1 RESPONSE IN MICE CARRYING HUMAN TUMOR NECROSIS FACTOR ALPHA TRANSGENE. R P Sharma1, M Tsunoda1, N Bhandari1, R T Riley2 and K A Voss2. 1University of Georgia and USDA-ARS, Athens, GA.

ALGAL PRODUCTS AS NATURALLY OCCURRING MODULATORS FOR THE MULTIDRUG RESISTANCE (MDR) TRANSPORTER, P-GLYCOPROTEIN. N Eufemia1, S Girshick1, G Duran2, B Sjö3, and D Epel1. 1Hopkins Marine Station, Pacific Grove, CA; 2Stanford Medical Center, Stanford University, Palo Alto, CA. Sponsor: R T Di Giulio.

TOXIC PROPERTIES OF EXTRACTS OF CYANOBACTERIAL MATS COLLECTED FROM ANTARCTIC MELT-WATER PONDS. C S Lampert1, H Kaspar2, P A Broady3, D R Dietrich1 and B C Hitzfeld1. 1Environmental Toxicology, University of Konstanz, Konstanz, Germany; 2Cawthron Institute, Nelson, New Zealand; Department of Plant and Microbial Sciences, University of Canterbury, Christchurch, New Zealand.

EFFECT OF OZONATION IN DRINKING WATER TREATMENT ON THE REMOVAL OF CYANOBACTERIAL TOXINS. S J Höger, D R Dietrich and B C Hitzfeld. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

IMMUNOCHEMICAL DETECTION OF MICROCYSTIN-LR IN TISSUES AND CELLS OF RAINBOW TROUT. W J Fischer1, J E Eriksson2, A Mikhailov3 and D R Dietrich1. 1Environmental Toxicology, University of Konstanz, Konstanz, Germany; 2Turku Centre for Biotechnology, Turku, Finland.

MICROCYSTIN-LR TOXICODYNAMICS, INDUCED PATHOLOGY AND IMMUNOHISTOCHEMICAL LOCALIZATION IN LIVERS OF RAINBOW TROUT. W J Fischer1, B C Hitzfeld1, F Tencalla2, J E Eriksson3, A Mikhailov3 and D R Dietrich1. 1Environmental Toxicology, University of Konstanz, Konstanz, Germany; 2Institute of Toxicology, Schwerzenbach, Switzerland; 3Turku Centre for Biotechnology, Turku, Finland.


SAFETY AND EFFICACY OF DEGLYCOSYLATED A-CHAIN OF RICIN (DGCA-RICIN) VACCINE FOR THE PROTECTION AGAINST AEROSOLIZED RICIN. R W Wannenmacher, R E Dinterman, G M Zaucha and, J W Boles. Toxicology and Pathology Divisions, US Army Medical Research Institute of Infectious Disease, Fort Detrick, MD.

HEALTH HAZARD ASSESSMENT FOR THE CONSUMPTION OF FRUIT BRANDIES CONTAINING CYANIDE-BASED COMPOUNDS. S A Assimon1, M A Adams1, E Jagerdeo2, S M Dugan2, P M Bolger1. 1Food and Drug Administration, Washington, DC; 2Bureau of Alcohol, Tobacco and Firearms, Rockville, MD.

NOVEL TOXINS AND NEW STRUCTURAL VARIANTS OF ENZYMES FROM COLOBRID SNAKE VENOMS. S P Mackessy, E R Hill and P Huang. Department of Biological Sciences, University of Northern Colorado, Greeley, CO. Sponsor: C S Gardiner.

COMPARATIVE TOXICITY OF FUMONISIN DERIVATIVES IN 28-DAY FEEDING STUDY USING FEMALE B6CF1 MICE. P C Howard1, L H Couch1, M Mushkelishvili2, R M Eppley3, D R Doerge1 and C Oberberg2. 1National Center for Toxicalogical Research, Jefferson, AR; 2Pathology Associates International, Jefferson, AR; 3Center for Food Safety and Applied Nutrition, Washington, DC.

INHIBITION AND STABILIZATION OF TOXIC PROTEINS: A MODEL SYSTEM IN SNAKE VENOMS. S M Bunekiyo and S P Mackessy. Department of Biological Sciences, University of Northern Colorado, Greeley, CO. Sponsor: C S Gardiner.


METABOLIC ACTIVATION OF GENOTOXINS IN FUSARIUM EXTRACTS AND EVIDENCE THAT FUSARIN C IS NOT RESPONSIBLE FOR DNA ADDUCT FORMATION. R J Beever, Jr., L H Couch, J B Sutherland, A J Williams, D R Doerge and P C Howard. National Center for Toxicalogical Research, Jefferson, AR.
INHIBITION OF TCDD-INDUCIBLE TRANSCRIPTION OF HUMAN CYP1A1 AND CYP1A2 GENES BY POLYPHENOLIC COMPOUNDS OF GREEN TEA. S N Williams¹, H Shih² and L C Quattrochi². ¹Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO; ²Department of Medicine, University of Colorado Health Sciences Center, Denver, CO.

EFFECT OF DIVINE ON SULFHYDRL STATUS, MEMBRANE SKELETAL PROTEINS AND MORPHOLOGY OF RAT ERYTHROCYTES. L C Bolzhoz and D C McMillan. Department of Pharmacology, Medical University of South Carolina, Charleston, SC.

CYTOTOXICITY AND GENOTOXICITY OF CAPSAICIN IN THE HUMAN NEUROBLASTOMA CELLS SHSY-5Y. F Richeux¹,², R Eminam¹,², M Cascante³, D Saboureau², E E Creppy¹, ¹Laboratory of Toxicology and Applied Hygiene, Faculty of Pharmaceutical Sciences, University of Bordeaux, Bordeaux, France. ²Palmer Research, Arbanats, France. ³Department de Bioquimica, Universitat de Barcelona, Barcelona, Spain.

EVALUATION OF CASTOR BEAN TOXICITY IN ANIMALS. J C Albrecht, S M Gwaltney-Brandt and S A Khan. ASPCA-National Animal Poison Control Center, Urbana, IL.

INHIBITION OF NADPH QUINONE OXIDOREDUCTASE BY COUMARIN (1,2-BENZOOPYRONE) IN HUMAN, RAT AND CHICK EMBRYO LIVER. D E Goeger, A W Hise and K E Anderson. Department of Preventive Medicine and Community Health, University of Texas Medical Branch, Galveston, TX.

FLOW CYTOMETRIC ANALYSIS OF BONE MARROW COMPARTMENTS CHIMERIC FOR EITHER THE ARYL HYDROCARBON OR ESTROGEN RECEPTORα REVEAL CELLULAR TARGETS OF TCDD AND ESTROGEN. F G Murante¹, J E Staples², T A Gastewicz², A E Silverstone². ¹Department of Environmental Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY; ²Department of Microbiology and Immunology, SUNY Health Science Center, Syracuse, NY.

THE ROLE OF THE ARYL HYDROCARBON RECEPTOR IN THE MATURATION OF CONVENTIONAL B LYMPHOCYTES AND IN 2,3,7,8-TETRACHLORO-DIOXIN (TCDD)-INDUCED B LYMPHOCYTE ALTERATIONS. T S Thurmond¹, J E Staples², A E Silverstone² and T A Gastewicz². ¹University of Rochester, Department of Environmental Medicine, Rochester, NY; ²SUNY–Health Science Center, Department of Microbiology and Immunology, Syracuse, NY.

POTENTIAL FACTORS FOR DECREASED PLATELET COUNTS IN MICE ADMINISTERED PHOSPHOROTHIOATE OLIGODEOXYNUCLEOTIDES. M V Temple and K M Lemonidis. Isis Pharmaceuticals, Carlsbad, CA.

PHARMACOKINETICS AND PHARMACODYNAMICS OF ERYTHROPOIETIN IN ETHANOL TREATED MICE. F N Agbo and E J Flynn. UMD-New Jersey Medical School, Newark, NJ. Sponsor: L G Sultato.

HYDROQUINONE ALTERS THE PHOSPHORYLATION STATE OF THE TRANSCRIPTION FACTOR P53 IN HUMAN CD34+ HEMATOPOIETIC PROGENITOR CELLS (HPC). S A Gross, D W Pyatt, Y Yang, J Zheng and R R Irons. Molecular Toxicology and Environmental Health Sciences, School of Pharmacy, University of Colorado Health Sciences Center, Denver, CO.

ROLE OF NITROSOBENZENE IN THE SPLENIC TOXICITY OF ANILINE. M F Khan and X Wu. Department of Pathology, University of Texas Medical Branch, Galveston, TX.

DIFFERENTIAL EXPRESSION OF GLUTATHIONE S-TRANSFERASE ISOZYMES IN K562, HL60 AND U937 HUMAN LEUKEMIA CELL LINES. J T Piper, S S Singhal, M K Saini, J Cheng, T Zhao, Y C Awasthi and S Awasthi. The University of Texas Medical Branch, Galveston, TX.

THE PRESENCE OF A MUSCARINIC RECEPTOR ON CANINE ERYTHROCYTE MEMBRANES. F W Oehme and R R Dalefield. Comparative Toxicology Laboratories, Kansas State University, Manhattan, KS.

COMPARATIVE EFFECTS OF PHENYLHYDRAZINE (PHZ) AND PHLEBOTOMY ON PERIPHERAL BLOOD, BONE MARROW AND ERYTHROPOIETIN LEVELS IN WISTAR RATS. K A Cresswell, A P Sukhanen, A F Hochbaum and M R Bleavins. Pathology and Experimental Toxicology, Parke-Davis Pharmaceutical Research, Warner-Lambert Company, Ann Arbor, MI.

EFFECT OF GENDER ON THE HEMATOGENICITY OF 2-BUTOXYETHANOL (BE) IN F344 RATS. B Chanars, S Ward, R Healy, A Nyska and B I Ghanayem. NIH/NIHES, Research Triangle Park, NC.

MONDAY AFTERNOON, MARCH 15

MONDAY AFTERNOON, MARCH 15
12:00 NOON - 4:15 PM
ERNEST N. MORIAL CONVENTION CENTER
LA LOUISIANE BALLROOM

MEDICAL RESEARCH COUNCIL (MRC) LECTURE, INTEGRATING GENES TO PHYSIOLOGY: A BIOENGINEERING PERSPECTIVE

Lecturer: Dr. Douglas A. Lauffenburger, Massachusetts Institute of Technology, Boston, MA

Advances in basic biology at the molecular and cellular levels during recent decades have dramatically increased the foundational information available on mechanistic underpinnings of physiology. Indeed, the genomics revolution has accelerated the pace at which reductionist data is being generated. It is widely agreed that a crucial challenge for the next decades is how to integrate information from the genetic level to the pharmacological level, connecting structure and function relationships at molecular, cell, and tissue levels within this hierarchy. This sort of integrative understanding will be of great value for technological progress in medical diagnostics and therapeutics as well as understanding of environmental influences on health.

Engineering disciplines are predicated on the complementary principles of analysis and synthesis of complex systems, combining in elegant quantitative "design principles" for the dependence of system behavior on component properties. The "measurement, modeling, and manipulation" approach that has characterized engineering disciplines based on the sciences of physics and chemistry is now finding biology accessible and manipulable as well. Thus, a new discipline of Bioengineering is emerging, directed toward analysis of biological systems in terms of key component properties and consequently toward synthesis of modified biological systems derived from controlled component properties. A central basis of current work resides at the molecule-to-cell and cell-to-tissue levels of the gene-to-pharmacology hierarchy, with the goals of understanding how molecular properties affect cell function and cell properties affect tissue function being viewed as bottlenecks that must be overcome especially as the gene-level information is accumulating so rapidly.

This lecture will offer an overview of the new Bioengineering perspective on integrating biology from gene to physiology, outlining major concepts in measurement, modeling, and manipulation across this hierarchy.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R06-R08

SYMPOSIUM SESSION: MOLECULAR AND CELLULAR MECHANISMS OF ANTIOXIDANT ACTION

Sponsored By: The Mechanisms Specialty Section

Chairperson: Daniel C. Liebler, University of Arizona, Tucson, AZ
Antioxidant enzymes and small molecule antioxidants play key roles in cellular defense against reactive oxidants associated with environmental chemicals. Recent work provides new insights into the complex interplay of oxidants and antioxidants and places antioxidant chemistry into a cellular perspective. This symposium will address the chemistry of small molecule antioxidants and the enzymatic linkage of cellular redox metabolism to antioxidant function. The small molecule antioxidants vitamin E and ubiquinol provide mutually supportive antioxidant protection through redox cycles that can be coupled to electron transport pathways. The mitochondrial electron transport protein cytochrome c acts as a redox switch in the control of cellular redox status and may provide a link between mitochondrial redox status and apoptosis. Polymorphisms of NAD(P)H:quinone oxidoreductase (DT-diaphorase) may dictate susceptibility to oxidant stress-related toxicity and new work suggests links the enzyme to regulation of vitamin E antioxidant actions. Other molecular species may be key players in cellular antioxidant function. Emerging evidence suggests that nitric oxide acts both as an important cellular antioxidant and as a prooxidant. Rapidly growing interest in chemoprotective effects of plant derived polyphenols focuses new interest in antioxidant mechanisms and chemistry of green tea catechins, which exert notable chemoprotective actions against chemical carcinogenesis.

#179 1:30 MOLECULAR AND CELLULAR MECHANISMS OF ANTIOXIDANT ACTION. D C Liebler. University of Arizona, Tucson, AZ.


#181 2:10 OXIDANTS AND ANTIOXIDANTS IN CELL GROWTH AND APOPTOSIS SIGNALING. D P Jones, J Cai and S Jiang. Department of Biochemistry and Program in Molecular Therapeutics and Toxicology, Emory University, Atlanta, GA.

#182 2:40 DT-DIAPHORASE (NQO1) AS AN ANTIOXIDANT ENZYME. RELEVANCE OF POLYMORPHISMS IN NQO1 FOR CHEMOPROTECTION. D Ross. Department of Pharmaceutical Sciences, School of Pharmacy, University of Colorado Health Sciences Center, Denver, CO.


#184 3:40 ANTIOXIDANT CHEMISTRY OF GREEN TEA CATECHINS. D C Liebler. Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

4:10 GENERAL DISCUSSION.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R02-R03

SYMPOSIUM SESSION: BIOTECHNOLOGY PRODUCTS, NOVEL COMPOUNDS AND TESTING STRATEGIES

Sponsored By: The Regulatory and Safety Evaluation Specialty Section

Chairperson: David K. Monieith, Isis Pharmaceuticals, Carlsbad, CA

Biotechnology is a significant industry with over 300 compounds for the treatment of human disease in development by over 100 companies. Inherent in the design of these products is species specificity, and, thus, testing in animals may indicate adverse effects unique to the animal model. Also, animal models will not typically identify potential exaggerated pharmacologic effects. Thus, selection of animal models is critical to the appropriate evaluation of effects relevant to humans. Typically, these compounds are evaluated in non-human primates because of the potential homology with humans. In addition, other novel animal models or testing strategies are adopted so that safety may be characterized to allow the ethical administration of these agents to patients. Toxicology testing strategies and regulatory issues for the evaluation of recombinant proteins, cytokines, gene therapy, and oligonucleotides will be presented for a few selected compounds. The information in this session should be of interest to individuals in the pharmaceutical and regulatory sectors. In addition, the methodology associated with the use of these agents will be useful to basic researchers.

#185 1:30 BIOTECHNOLOGY PRODUCTS: NOVEL COMPOUNDS AND CHALLENGING TOXICOLOGY. D K Monieith. Isis Pharmaceuticals, Carlsbad, CA.

#186 1:35 ANTISENSE OLIGONUCLEOTIDES: TOXICOLOGY FROM MICE TO HUMANS. D K Monieith, R Geary, S P Henry, M Templin and A A Levin. Isis Pharmaceuticals, Carlsbad, CA.

#187 2:05 GENE THERAPY: CHALLENGES IN THE DESIGN AND INTERPRETATION OF TOXICOLOGY STUDIES. M E I Leibbrandt. Department of Toxicology, Chiron, Emeryville, CA.

#188 2:35 CONSIDERATION OF BIOLOGY IN THE DESIGN OF TOXICOLOGY STUDIES TO SUPPORT CLINICAL DEVELOPMENT OF NEUROTROPHIC FACTORS. H Davis, D Miller, A Standeve, and C LeBel. Amgen, Thousand Oaks, CA.

#189 3:05 ISSUES AND STRATEGIES IN THE DEVELOPMENT OF RECOMBINANT HUMAN INTERLEUKIN-4 (rhIL-4). M W Leach. Schering-Plough Research Institute, Lafayette, NJ.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#190 3:35 DEFINING RELEVANT ANIMAL SPECIES FOR TOXICITY EVALUATION OF BIOLOGIC THERAPEUTICS; CRITICAL GROUNDWORK FOR BASING PRECLINICAL TOXICITY PROGRAM STRATEGIES. L E Black and M D Green. Food and Drug Administration, CBER/OTRR, Rockville, MD.

4:05 GENERAL DISCUSSION.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM ERNEST M. MORIAL CONVENTION CENTER ROOMS 208-210

WORKSHOP SESSION, VALIDATION OF TOXICOLOGY TEST METHODS; IMMUNOTOXICOLOGY CASE STUDIES

Sponsored By: The Immunotoxicology and In Vitro Specialty Sections

Chairpersons: G. Frank Gerberick, Procter & Gamble Company, Cincinnati, OH and Albert E. Munson, NIOSH, Morgantown, WV

In the US and Europe guidelines exist for evaluation and validation of new alternative test methods. These guidelines have been used as a framework for the assessment of novel methods which offer benefits in the context of the requirement for experimental animals with respect to Replacement, Reduction and/or Refinement. The objective of this Workshop is to use examples, primarily from the discipline of Immunotoxicology, to consider the strategies necessary to gain acceptance of novel test methods by regulatory authorities and to bring to the attention of the toxicology community the issues that need to be addressed in assay evaluation and validation. The current guidelines used for consideration of alternative methods will be reviewed with particular emphasis on those developed by the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM). As a classic illustration of a validation exercise, the evaluation of a novel phototoxicity method, the 3T3 Neutral Red Uptake Phototoxicity Assay, will be discussed. In addition, a rather different approach used for the assessment of the local lymph node assay, a method for the identification of contact allergens, will be described and the current validation status of this method discussed. Finally, the validation needs of the methods currently available for the identification of potential immunotoxins will be considered in the context of new and emerging regulatory requirements. The main goal of this workshop is to stimulate discussion between those who are applying modern science to the development of novel approaches to toxicity testing and those charged with evaluating those new methods to ensure the level and consistency of performance necessary for regulatory acceptance.

#191 1:30 VALIDATION OF TOXICOLOGY TEST METHODS: IMMUNOTOXICOLOGY CASE STUDIES. G F Gerberick1 and A E Munson2. 1Procter & Gamble, Miami Valley Laboratories, Cincinnati, OH; 2NIOSH/HELD, Morgantown, WV.

#192 1:40 GUIDELINES FOR VALIDATION AND ACCEPTANCE OF TOXICOLOGY TESTING METHODS. W S Stokes. Environmental Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: G F Gerberick.

#193 2:15 IN VITRO 3T3 NEUTRAL RED UPTAKE PHOTOTOXICITY TEST (3T3 NRU PT): A COORDINATED VALIDATION PROCESS. H Spielmann. ZEBET (National Center for Validation and Evaluation of Alternative Methods to Animal Experiments) at the BgVV (Fed. Institute for Health Protection of Consumers and Veterinary Medicine), Berlin, Germany. Sponsor: G F Gerberick.


#195 3:25 VALIDATION STATUS AND REGULATORY ACCEPTANCE OF LABORATORY ANIMAL-BASED TESTING METHODS TO ASSESS DRUG AND CHEMICALLY-INDUCED IMMUNOSUPPRESSION. P T Thomas. Covance Laboratories Inc., Madison, WI.

4:00 GENERAL DISCUSSION.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM ERNEST M. MORIAL CONVENTION CENTER ROOMS R04-R05

WORKSHOP SESSION, ANIMAL MODELS OF CARDIOPULMONARY DISEASE: IMPACT OF AIR POLLUTION ON AT RISK POPULATIONS

Sponsored By: The Immunotoxicology and Inhalation Specialty Sections and the Task Force to Improve the Scientific Basis of Risk Assessment

Chairpersons: Judith T. Zelikoff, New York University School of Medicine, Tuxedo, NY and Daniel L. Morgan, NIEHS, Research Triangle Park, NC.

The potential for pre-existent disease to alter adverse responses to air pollutant exposure is well-known, but only poorly understood. While the variation in susceptibility to the health effects of toxicants due to species, age, and gender, have been well-studied and considered in estimations of human health risk, a database on human susceptibilities related to pre-existent disease is lacking. Investigations involving animal models of human diseases offer more control over both host and environmental variables, but the results require careful interpretation in regards to extrapolation to the human situation. Although animal models of human disease have been widely used to develop intervention strategies, their use for determining toxicant-induced effects have been sporadic and have only recently gained popularity. In this workshop, the usefulness of using animal models of cardiopulmonary disease for assessing the toxic effects of inhaled gaseous and particulate pollutants is discussed, as well as the criteria for evaluating each model's utility and limitations for such studies. This workshop should be of particular interest to
investigators in the area of immunotoxicology, inhalation toxicology and risk assessment.

**ANIMAL MODELS OF CARDIOPULMONARY DISEASE: IMPACT OF AIR POLLUTION ON AT RISK POPULATIONS. J T Zeltikoff and D L Morgan.**
1 New York University School of Medicine, Tuxedo, NY; 2NIHES, Research Triangle Park, NC.

**ANIMAL MODELS OF CARDIOPULMONARY DISEASE: ROLE IN AIR POLLUTION TOXICOLOGY. R B Schlesinger.** Department of Environmental Medicine, NYU School of Medicine, Tuxedo, NY.

**MODELS OF ASTHMA/ALLERGY. T Gordon.**
NYU School of Medicine, Tuxedo, NY.

**MODELS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD). D L Costa.**
Pulmonary Toxicology Branch, ETD/NIHES, US EPA, Research Triangle Park, NC.

**MODELS OF RESPIRATORY INFECTION. J T Zeltikoff.**
New York University School of Medicine, Nelson Institute of Environmental Medicine, New York, NY.

**MODELS OF CARDIAC AND CARDIOPULMONARY VASCULAR DISEASE. U P Kodavanti.** NIHES, U.S. Environmental Protection Agency, Research Triangle Park, NC.

**THE UTILITY OF DATA FROM ANIMAL MODELS OF CARDIOPULMONARY DISEASE FOR AIR POLLUTION RISK ASSESSMENT. J L Manderly.**
Lovelace Respiratory Research Institute, Albuquerque, NM.

**GENERAL DISCUSSION.**

**MONDAY AFTERNOON, MARCH 15**
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER ROOM 207

**PLATFORM SESSION: ENVIRONMENTAL TOXICOLOGY**

Chairpersons: Howard W. Mielke, Xavier University of Louisiana, New Orleans, LA and James H. Sherman, Solutia, Inc., St Louis, MO

**POTENTIATION OF ENVIRONMENTAL TOXICANTS CONTRIBUTES TO FROG DEFORMITIES. J G Burkhart, D J Ford, T L Propst, E L Stover, K Gallagher and J C Helgen.**
1 The Stover Group, Stillwater, OK; 2NIHES Research Triangle Park, NC; 3MPCA, St. Paul, MN.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#212 3:45 CHRONIC DOSING STUDY TO ASSESS HEALTH AND REPRODUCTIVE EFFECTS OF TUNGSTEN-IRON AND TUNGSTEN-POLYMER SHOT ON GAME-FARM MALLARDS. R R Mitchell1, D M Powell1, R J Augierl, R J Balander1, S D Fitzgerald2 and S J Bursian1,3. 1Department of Animal Science, 2Animal Health Diagnostic Lab, 3Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#213 4:00 IN VITRO TOXICITY EVALUATION OF SUMITHION USING CILIATED PROTOZOA PARAMECIUM CAUDATUM. M M Hussain. Environmental Biology Laboratory, Department of Zoology, University College of Science, Osmania University, Hyderabad, India. Sponsor: S Hussain.

#214 4:15 MERCURY EXPOSURE, TOXICITY AND MALARIA PREVALENCE AMONG BRAZILIAN GOLD MINERS. D Nash1, G T Strickland1, C Trevant1, J M de Souza2, R S U da Silva2 and E K Silbergeld1. 1University of Maryland School of Medicine, Baltimore, MD; 2Instituto Evandro Chagas, Belem, Brazil.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 206

POSTER DISCUSSION SESSION: ESTROGENS AND MALE REPRODUCTIVE SYSTEM DEVELOPMENT

Chairpersons: Robert E. Chapin, NIEHS, Research Triangle Park, NC and L. Earl Gray, Jr., US EPA, NHEERL, Research Triangle Park, NC

Displayed: 1:30 PM - 4:30 PM
Discussed: 2:30 PM - 4:30 PM

#215 EVALUATION OF REPRODUCTIVE ORGAN DEVELOPMENT IN CF-1 MICE AFTER PRENATAL EXPOSURE TO BISPHENOL A. J M Waechter, Jr1, S S Dimond2, W J Newsom3, J H Butler4, S Z Cagen5, F W Jekat6, R L Joiner, R N Shiotoku7 and G E Veenestra8. 1The Dow Chemical Company, Midland, MI; 2Texas A&M University, College Station, TX; 3University of Washington, Seattle, WA; 4University of California, Los Angeles, CA; 5University of Wisconsin-Madison, Madison, WI; 6Shell Chemical Company, Houston, TX; 7Shell Chemical Company, Pittsfield, MA; 8General Electric Co, Pittsfield, MA.

#216 EVALUATION OF REPRODUCTIVE ORGAN DEVELOPMENT IN THE MALE OFFSPRING OF FEMALE WISTAR RATS EXPOSED TO BISPHENOL A IN THE DRINKING WATER. S S Dimond1, J M Waechter, Jr2, W J Bruslin3, J H Butler4, S Z Cagen5, F W Jekat6, R L Joiner, R N Shiotoku7 and G E Veenestra8. 1General Electric Company, Pittsfield, MA; 2The Dow Chemical Company, Midland, MI; 3MPI Research, Mattawan, MI; 4Consultant to Aristech, Pittsburgh, PA; 5Shell Chemical Company, Houston, TX; 6Bayer AG, Wuppertal, Germany; 7Bayer Corporation, Stilwell, KS; 8Shell Chemicals Ltd., London, England.

#217 THE INFLUENCE OF LIFETIME EXPOSURE TO DIETARY BISPHENOL A ON THE MALE RAT REPRODUCTIVE TRACT. W A Fritz and C A Lamartiniere. University of Alabama at Birmingham, Birmingham, AL.

#218 LACK OF DEVELOPMENTAL/REPRODUCTION EFFECTS WITH LOW CONCENTRATIONS OF BUTYL BENZYL PHTHALATE IN DRINKING WATER IN RATS. R S Nair1, F W Jekat1, D H Waalkens-Berendsen2, R Eiben2, R A Barter3 and M A Martin4. 1Solutia Inc., St. Louis, MO; 2Bayer AG, Wuppertal, Germany; 3TNO Nutrition and Food Research Institute, Zeist, The Netherlands; 4Monsanto Technical Center, Louvain-la-Neuve, Belgium.

#219 LACK OF EFFECTS ON MALE REPRODUCTIVE PARAMETERS IN RATS BY PERINATAL DIETHYLSILBESTROL (DES) EXPOSURE AT MATERNALLY TOXIC LEVELS IN DRINKING WATER. F W Jekat1, J M Waechter Jr2, R S Nair3, W J Bruslin4, D H Waalkens-Berendsen5, R A Barter3, S S Dimond6, J H Butler7, S Z Cagen8, R L Joiner9, M A Martin9, R N Shiotoku10 and G E Veenestra11. 1Bayer AG, Wuppertal, Germany; 2Shell Chemical Company, Midland, MI; 3Solutia Inc., St. Louis, MO; 4MPI Research, Mattawan, MI; 5TNO Food and Nutrition Research Institute, Zeist, The Netherlands; 6General Electric Co, Pittsfield, MA; 7Consultant to Aristech, Pittsburgh, PA; 8Shell Chemical Company, Houston, TX; 9Monsanto, Louvain-la-Neuve, Belgium; 10Bayer Corp, Stilwell, KS; 11Shell Chemical Ltd., London, England.

#220 PRENATAL EXPOSURE TO ESTROGENIC ENDOCRINE DISRUPTING CHEMICALS (EDCS) AFFECTS SEXUAL DIFFERENTIATION OF THE RAT BRAIN. S A Lauesig, M M McCarthy and E K Silbergeld. University of Maryland, Baltimore, MD.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#221 APOPTOSIS IN THE SEXUALLY DIMORPHIC NUCLEUS OF THE PREOPTIC AREA AND PUBERTAL DEVELOPMENT IN RATS EXPOSED TO BISPHENOL A DURING PREGNATAL AND POSTNATAL DEVELOPMENT. S Kwon, R C Catley and P Welsch. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#222 TESTICULAR DAMAGE IN MALE RATS FOLLOWING NEONATAL EXPOSURE TO NONYLPHENOLS (NPAs). P C Lee and K C Nickels. Department of Pediatrics, Medical College of Wisconsin, Milwaukee, WI.

#223 TWO-GENERATION REPRODUCTION STUDY WITH P-TERT-OCTYLPHENOL (OP) IN RATS. R W Tyl1 C B Myers1, M C Marr1, D R Brine1, P A Fail1, J C Seely2 and J P Van Miller2. 1Research Triangle Institute, Research Triangle Park, NC; 2PATHCO, Inc., Research Triangle Park, NC; 3Union Carbide Corporation, Danbury, CT.

#224 EFFECTS OF DIETARY GENISTEIN EXPOSURE DURING DEVELOPMENT ON SPRAGUE-DAWLEY RATS. K B Delcos1, L G Lomax2, C C Weiss1, C L Holder3, D R Doerge1 and R R Newbold2. 1CTR, Jefferson, AR; 2PAI, Jefferson, AR; 3NIEHS, Research Triangle Park, NC.

#225 MODULATION OF STEROID RECEPTOR EXPRESSION IN THE PROSTATE AND TESTES OF RATS BY DIETARY GENISTEIN. A Dula1, B S Blaydes1, C C Weiss1, J R Latendresse2, R R Newbold3 and K B Delcos1. 1National Center for Toxicological Research and 2Pathology Associates International, Jefferson, AR; 3NIEHS, Research Triangle Park, NC.

#226 EFFECTS OF DIETARY GENISTEIN ON STEROID AND GROWTH FACTOR RECEPTORS INVOLVED IN MAMMARY GLAND GROWTH AND DEVELOPMENT. B S Blaydes1, A Dula1, J R Latendresse2 and K B Delcos1. 1National Center for Toxicological Research and 2Pathology Associates International, Jefferson, AR.

Discussed: 2:30 PM - 4:30 PM

#227 ANALYSIS OF PUBLIC HEALTH IMPACTS ASSOCIATED WITH REMOVAL OF LEAD PAINT FROM NYC BRIDGES. T M Slayton, J T Cohen, P Sinha and T S Bowers. Gradient Corporation, Cambridge, MA.

#228 ISSUES RELATED TO MODELING OF AGE-DEPENDENT ABSORPTION AND BIOKINETICS OF LEAD. M Maddaloni1, P E Goodrum2 and G L Diamond3. 1US Environmental Protection Agency, New York, NY; 2Syracuse Research Corporation, Syracuse, NY.

#229 USING BLOOD LEAD STUDIES TO ESTIMATE SOIL INGESTION RATES IN CHILDREN J C Wilson1 and W J Adams2. 1Kleinfield Inc., Englewood, CO; 2Kennecott Utah Copper Corporation, Magna, UT.


#231 AN INTEGRATED MODEL OF BLOOD LEAD AND BONE LEAD DURING AND AFTER PREGNANCY IN LATINA IMMIGRANTS. R Cuellar1, S J Rothenberg2, F Khan1, M Manalo1, J Jiang1, B Reynoso1, S Reyes1, A Aguilar1, A C Todd3 and C Johnson1. 1Drew University of Medicine and Science, Los Angeles, CA; 2Instituto Nacional de Perinatologia, Mexico City, Mexico; 3Mt. Sinai School of Medicine, New York, NY. Sponsor: M R I Soliman.


#233 SPATIAL DISTRIBUTION OF EEG THETA ACTIVITY AS A FUNCTION OF LIFE-TIME LEAD EXPOSURE IN NINE-YEAR OLD CHILDREN. A Poblano1, S J Rothenberg3, L Schmaas2. 1Instituto de Comunicación Humana, Mexico City, Mexico; 2Instituto Nacional de Perinatología, Mexico City, Mexico; 3Instituto Nacional de Salud Pública, Cuernavaca, Mexico.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM
ERNEST H. MORIAL CONVENTION CENTER
ROOM R09

POSTER DISCUSSION SESSION: LEAD BIOAVAILABILITY, DEVELOPMENTAL TOXICITY AND PUBLIC HEALTH


Displayed: 1:30 PM - 4:30 PM
REDUCTION OF ELECTRORETINOGRAM AMPLITUDE IN THE DARK-ADAPTED EYE OF CHILDREN ASSOCIATED WITH PRENATAL AND POSTNATAL BLOOD LEAD LEVEL. S J Rothenberg1,2, L Schnaas3, M Salgado1, H K Hudnell4 and A Geller4. 1Instituto Nacional de Salud Pública, Cuernavaca, Mexico; 2Drew University of Medicine and Science, Los Angeles, CA; 3Instituto Nacional de Perinatología, Mexico City, Mexico; 4Environmental Protection Agency, Research Triangle Park, NC. Sponsor: M R J Soliman.

BIPHASIC EFFECT OF PRENATAL BLOOD LEAD LEVEL ON BRAINSTEM AUDITORY EVOKED RESPONSE IN CHILDREN AT FIVE YEARS. L Schnaas1, A Pobleno1,2 and S J Rothenberg3,4. 1Instituto Nacional de Perinatología, Mexico City, Mexico; 2Instituto de Comunicación Humana, México City, Mexico; 3Instituto Nacional de Salud Pública, Cuernavaca, Mexico; 4Drew University of Medicine and Science, Los Angeles, CA. Sponsor: M R J Soliman.

EFFECTS OF IN VIVO VERSUS IN VITRO Pb ON BRAIN PROTEIN KINASE C (PKC) ACTIVITY. K Illacott, J D Cremin, Jr. and D R Smith. Environmental Toxicology, University of California, Santa Cruz, CA.

EFFECT OF PRENATAL LEAD EXPOSURE ON COCAINE CONDITIONED PLACE PREFERENCE IN RATS. J A B Alfaro3, B A Sorg1, E K Silbergeld2 and J O Schenk3. 1Department of VCAPP, Washington State University, Pullman, WA; 2Program in Human Health and the Environment, University of Maryland Medical School, Baltimore, MD and 3Department of Chemistry, Washington State University, Pullman, WA.

THE SUPPRESSIVE EFFECTS OF CORTEX MORI ON NO, TNF-α AND IL-1 PRODUCTION BY MACROPHAGE. C Yoon, J T Hong, D Shin and C Hong. Korea Food and Drug Administration, KFDA, Seoul, Korea.

DECREASED RESPONSE TO ENDOTOXIN CHALLENGE BY PRE-TREATMENT WITH ERGOTAMINE. N M Filipov1, P N Thompson2, J A Studemanni3, D L Dawe1, T H Elsasser3, S Kahl2, C R Young1. 1University of Georgia, Athens, GA; 2USDA/ARS, J Phi Campbell, Sr., NRCC, Watkinsville, GA; 3USDA/ARS, Growth Biology Laboratory, Beltsville, MD; 4USDA/ARS, FAPRL, College Station, TX.

PLASMA INTERLEUKIN-10 AND NITRITE/NITRATE CONCENTRATIONS IN THE HUMAN ENDOTOXIN MODEL. C R Cunningham, R T Toheva, S J Shedlofsky. Department of Medicine (III), VA Medical Center, University of Kentucky, Lexington, KY.

PERSISTENT PULMONARY INFLAMMATION AFTER INTRATRACHEAL INSTILLATION OF ABRASIVE BLASTING AGENTS. N S Minhas, L A Battelli, D W Porter, W T Goldsmith, A. Dotson, W Jones, M Greskovich, J Y C Ma and A F Hubbs. HELD and DRDS, NIOSH, CDC, Morgantown, WV.

EFFECTS OF OZONE EXPOSURE ON CYTOKINE EXPRESSION IN HUMAN NASAL EPITHELIAL CELLS. B G Nicholas, J Q Koenig, J S Woods and D L. Luchtel. Department of Environmental Health, University of Washington, Seattle, WA.

AP-1 BINDING ACTIVITY IS ALTERED IN LPS-TREATED TNF ALPHA (p55/p75) DOUBLE RECEPTOR KNOCK-OUT MICE. A L Roe1, G W Warren2, M P Mattson3,4 and R A Blouin2,3. 1Department of Environmental Health, University of Cincinnati; Cincinnati, OH; 2Graduate Center for Toxicology, 3Sanders-Brown Research Center, 4Department of Anatomy and Neurobiology and 5College of Pharmacy, University of Kentucky, Lexington, KY.

JP-8 JET FUEL INDUCED RELEASE OF PRO-INFLAMMATORY CYTOKINES IL-1β AND IL-6 FROM RAT ALVEOLAR TYPE II CELLS IN CO-CULTURE WITH RAT ALVEOLAR MACROPHAGES. R S Young and M L Witten. Department of Pediatrics and Department of Pharmacology/Toxicology, University of Arizona, Tucson, AZ.
#246 INSTILLED SOLUBLE VANADIUM EVOICES PULMONARY INFLAMMATION BUT DOES NOT ELICIT PRO-INFLAMMATORY CHEMOKINE mRNA IN THE HEART. J D Paulauskas 1, H Danaee 1, J M Antonini 2, E Al-Mutairi 1, T Rice 1, J J Godleski 1 and R W Clarke 1. 1 Harvard School of Public Health, Boston, MA; 2 HELD/NIOSH, Morgantown, WV.

#247 DEVELOPMENT OF A TAQMAN® BASED QUANTITATIVE RT-PCR ASSAY FOR CANINE CYTOKINE INDUCTION. T R Pippert, K B Bleicher, J F Sina, T R Skopek and D R Umbenhauer. Merck Research Labs, West Point, PA.


#250 CHARACTERIZATION OF SULFUR MUSTARD-INDUCED DERMAL PROINFLAMMATORY MEDIATOR RESPONSE. M M Danne 1, R P Casillas 2, M C Babin 2 and J A Blank 1. 1 Battelle Memorial Institute, Columbus, OH; 2 US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#251 THE EFFECT OF TCDD EXPOSURE ON SERUM AMYLOID A (SAA) INDUCTION IN RESPONSE TO ENDOXORIN SHEEP RED BLOOD CELL STIMULATION IN C57BL/6 MICE. J Y Choi and N I Kerkiidiet. Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#252 ROLE OF PROLIFERATION IN THE IN VIVO RESPONSE OF RAT LIVER TO FUMONISIN B1. W Li, R T Riley, K A Voss and W P Norred. Toxicology and Mycotoxic Research Unit, Russell Research Center, ARS/USDA, Athens, GA.

#253 FUSARIC ACID DID NOT MODIFY THE HEPATIC OR RENAL TOXICITY OF FUMONISIN-PRODUCING FUSARIUM MONILIFORME. K A Voss, J K Porter, C W Bacon, F I Meredith and W P Norred. Russell Research Center, ARS/USDA, Athens, GA.

#254 THE MYCOTOXIN FUMONISIN B1 ALTERS SPHINGOLIPID BIOSYNTHESIS AND INHIBITS BACTERIAL PHAGOCYTOSIS. J A Gunprachit, G K Wolleenberg, M S Kuhlenschmidt, P D Constable, H M Parker, M E Tumbleson, C A Simutis and W M Hashek-Hock. Departments of Veterinary Pathobiology, Veterinary Biosciences and Veterinary Clinical Medicine, University of Illinois, Urbana, IL.

#255 THE EFFECTS OF FUSARIUM TOXINS IN LOW DOSE ON HOST DEFENSE AGAINST INFECTIOUS DISEASE. Y Sugisaka-Konishi and S Kumagai. National Institute of Infectious Diseases, Shinjuku, Tokyo, Japan. Sponsor: R T Riley.

#256 SUBCUTANEOUS FUMONISIN ADMINISTRATION DISRUPTS SPHINGOLIPID METABOLISM IN THE DIGESTIVE EPITHELIA IN MICE. E N Enongene, E N Christel 1, R P Sharma 2, K A Voss 1 and R T Riley 1. 1 Toxicology and Mycotoxic Research Unit, USDA-ARS, Athens, GA; 2 College of Veterinary Medicine, University of Georgia, Athens, GA.

#257 PATULIN EXHIBITS MULTIPLE ELECTROPHILIC PROPERTIES AND COVALENTLY CROSSLINKS PROTEINS IN VITRO. R Fliege and M Metzler. Institute of Food Chemistry, University of Karlsruhe, Karlsruhe, Germany.

#258 APPLICATION OF IMMOBILIZED ACTIVATED CARBON FOR THE SORPTION OF PATULIN FROM AQUEOUS SOLUTION. H J Huebner, K Mayura, C L Ake, S L Lemke and T D Phillips. Faculty of Toxicology, Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, Texas.

#259 BIOCHEMICAL FACTORS INVOLVED IN AGE-RELATED SENSITIVITY TO AFLATOXIN B1 IN POULTRY. J P Klein, R E Buckner and R A Coulombe, Jr. Programs in Toxicology and Molecular Biology, Utah State University, Logan, UT.
ALTERATIONS IN CYTOCHROME P-450 EXPRESSING HUMAN LUNG CELLS AFTER AFB1 EXPOSURE. T R Van Vleet1, K Macie2 and R A Coulombe, Jr.1 1Programs in Toxicology and Molecular Biology, Utah State University, Logan, UT; 2Nestle Research Centre, Lusanne, Switzerland.

DEVELOPMENT OF LIVER INJURY IN RATS TREATED WITH AFLATOXIN B1 AND ENDOTOXIN AND PROTECTION BY NEUTROPHIL DEPLETION. C C Barton, P E Ganey and R A Roth. Department of Pharmacology and Toxicology, Institute for Environmental Toxicology and National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

EFFECTS OF PHYTOCHEMICALS ON AFLATOXIN-INDUCED CYTOTOXICITY. J W Ho and H T Chan. Department of Biochemistry, C.U.H.K., Shatin, Kowloon, Hong Kong.

QUALITATIVE STRUCTURE ACTIVITY RELATIONSHIP ANALYSIS OF TRICHOTHECENE MYCOTOXINS. J R Clarke1, R L Uzarzki1, 2, D G Uzarzki3 and J J Pestka1, 2. 1Department of Food Science and Human Nutrition, 2Institute of Environmental Toxicology, 3Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI.

EFFECT OF PIROXICAM ON OCHRATOxin A - INDUCED INHIBITION OF PROTEIN SYNTHESIS IN VERO CELLS. I Baudrimont and E E Creppy. Laboratoire de Toxicologie et d’Hygiène Appliquée, UFR des Sciences Pharmaceutiques, Université Victor Segalen Bordeaux, Bordeaux, France.

OCHRATOxin A(OTA) REVERSIBLY INHIBITS PROLIFERATION IN THE LLCPK-1 CELL LINE. F Schwöbel, E O’Brien and D R Dietrich. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

TOXIC EFFECTS OF OCHRATOxin A ON CATECHOLAMINE - RICH HUMAN NEUROBLASTOMA CELL LINE. A Belmadani and E E Creppy. Laboratory of Toxicology, University Bordeaux, Bordeaux, France.

ERYTHRITOL: AN INTERPRETIVE SUMMARY OF BIOCHEMICAL, METABOLIC, TOXICOLOGICAL AND CLINICAL DATA. I C Munro1, W O Berndt2, J F Borzellino3, G Flamm4, B S Lynch1, E Kenepohol1, A Bárány2, and J Modderman5. 1CanTox Inc., Consultants in Toxicology, Health and Environmental Sciences, Mississauga, ON, Canada; 2University of Nebraska Medical Center, Nebraska’s Health Science Center, Omaha, NE; 3Department of Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA; 4Flamm Associates, Vero Beach, FL; 5Bioresto AG, Bingngen, Switzerland; and 6Keller and Heckman, LLP, Washington, DC.

ORAL TWO-GENERATION REPRODUCTION STUDY IN RATS ON PHYSTEROL-ESTERS (PE) - A NOVEL FUNCTIONAL FOOD D H Waalkens-Berendsen1, A P M Wolterbeek1, M Richold2 and P A Hephburg2. 1NO Nutrition and Food Research Institute, Toxicology Division, Zeist, The Netherlands and 2Safety & Environmental Assurance Centre, Unilever Research, Colworth House, Sharnbrook, UK.

GENETIC TOXICITY IN VITRO OF BISPHENOL A-DIGLYCIDYL ETHER (BADGE) AND ITS HYDROLYSIS PRODUCT. E Pfleiffer and M Metzler. Institute of Food Chemistry, University of Karlsruhe, Karlsruhe, Germany.

SUBCHRONIC ORAL TOXICITY OF EPICLAVICATECHIN GALLATE (ECCG) IN RATS AND DOGS. D L McCormick1, W D Johnson1, R L Morrissey2 and J A Crowell2. 1NIH Research Institute, Chicago, IL; 2Pathology Associates International, Chicago, IL; and 3National Cancer Institute, Bethesda, MD.

SUBCHRONIC ORAL TOXICITY OF GREEN TEA POLYPHENOLS IN RATS AND DOGS. W D Johnson1, R L Morrissey2, J A Crowell2 and D L McCormick1. 1NIH Research Institute, Chicago, IL; 2Pathology Associates International, Chicago, IL; and 3National Cancer Institute, Bethesda, MD.

ADRENERGIC AGONISTIC EFFECTS AND CYTOTOXICITY OF CHINESE EPHEdra (MA-HUANG) USED FOR WEIGHT REDUCTION. M K Lee, Y H Wong, C T Che4 and D P H Hsieh. Department of Biology and 1Department of Chemistry, Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong, PRC.

STRATEGIES FOR ESTIMATING PROVISIONAL ACCEPTABLE RESIDUES (PAR) FOR EXTRALABEL DRUG USE IN FOOD ANIMALS. R E Baynes, T Martin-Jimenez, A L Crumley, J J Freeman, D J Letinski and M J Miller. Exxon Biomedical Sciences, Inc, E Millstone, NJ.

BELL-SHAPED RELATIONSHIP BETWEEN MOLECULAR WEIGHT AND DOSE-RESPONSE TO WHITE MINERAL OILS IN FISCHER 344 (F344) RATS. J G Drummond, J J Freeman, D J Letinski and M J Miller. Exxon Biomedical Sciences, Inc, E Millstone, NJ.

LOW MELT POINT PARAFFIN WAX (LMPW) CAUSES FOREIGN BODY RESPONSE IN FISCHER 344 (F344) AND SPRAGUE-DAWLEY (SD) RATS. J L Teverdok, S J Waterman, J Nold, S Franke, J Rojko and W Hall. 1American Petroleum Institute White Oils and Waxes Research Group, Washington, DC; 2Pathology Associates International, Frederick, MD.

POTENTIAL PROBLEMATIC GLYCOALKALOIDS IN PORK CHOPS. J M Betz and T Garland. 1US FDA, Center for Food Safety and Applied Nutrition, Washington, DC; 2Texas A&M University, Department of Veterinary Physiology & Pharmacology, College Station, TX. Sponsor: J Spoo.

CHOLESTERYMINE PROTECTION AGAINST OCHRATOXIN A (OTA) TOXICITY: ROLE OF OTA ADSORPTION BY THE RESIN AND BILE ACID ENTEROHEPATIC CIRCULATION. A Kerkadi, C Barrau, R R Marquardt, A A Frolich, I M Yousef and B Tuchweber. 1Department of Nutrition and 2Pharmacology, Université de Montréal, Quebec, Canada; 3Department of Animal Science, University of Manitoba, Winnipeg, Canada. Sponsor: J Chakraborti.

EFFECT OF MENTHA PIPERITA AND MENTHOL ON CCL_2-INDUCED HEPATIC LIPID PEROXIDATION IN FEMALE RATS. Z A Fadhel and S J Abdul-Rahman. College of Pharmacy, Jordan University for Women, Amman, Jordan.

OXYGEN REACTIVE RADICALS PRODUCTION IN CELL CULTURE BY OKADAIC ACID AND THEIR IMPLICATION IN PROTEIN SYNTHESIS INHIBITION. W G Matias, A Tracè, M Bonini and E E Creppy. Laboratory of Toxicology, University of Bordeaux, Bordeaux, France.

MECHANISM OF ASCIDIDE M TOXICITY TO CHO CELLS. S S Matsumoto, D M Schmehl, B R Copp, J A Holden and L R Barrows. 1Department of Pharmacology and Toxicology and 3Department of Pathology, University of Utah, Salt Lake City, UT; 2Department of Chemistry, The University of Auckland, Auckland, New Zealand.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM
ERNEST N MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: TCDD, AH RECEPTOR AND ARNT

Chairpersons: Timothy R. Zacharewski, Michigan State University, East Lansing, MI and Thomas A. Gasiewicz, University of Rochester, Rochester, NY

Displayed: 1:30 PM - 4:30 PM

Attended: 1:30 PM - 3:00 PM

FUNCTIONAL CHARACTERIZATION OF ARL HYDROCARBON RECEPTOR PHOSPHORYLATION MUTANTS IN THE MAJOR PHOSPHORYLATION REGION. S K Park and T A Gasiewicz. Department of Environmental Medicine, School of Medicine and Dentistry, University of Rochester, NY.

MODULATION OF BENZ[a]PYRENE TOXICITY BY 3'-METHOXY-4'. NITROFLAVONE. S D Dertinger and T A Gasiewicz. Department of Environmental Medicine, University of Rochester, Rochester, NY.

ANALYSIS OF AH-RECEPTOR-MEDIATED SIGNAL TRANSDUCTION IN CELL CULTURE MODELS EXPOSED TO HYPOXIC CONDITIONS REVEALS LACK OF COMPETITION FOR THE ARNT PROTEIN. T Shearer, N Davarinos and RS Pollenz. Departments of Biochemistry and Molecular Biology, Medical University of South Carolina, Charleston, SC.

IDENTIFICATION OF A DOMAIN RESPONSIBLE FOR THE NEGATIVE FUNCTION OF rARNTa IN AH RECEPTOR DEPENDENT SIGNALLING. B Necula and RS Pollenz. Department Biochemistry and Molecular Biology, MUSC, Charleston, SC.

ANALYSIS OF AH-RECEPTOR DOWN REGULATION IN CELL CULTURE LINES DERIVED FROM HUMAN TISSUES. R S Pollenz. Department Biochemistry and Molecular Biology, MUSC, Charleston, SC.

53
OXIDATIVE STRESS IN FEMALE B6C3F1 MOUSE LIVER AND BRAIN FOLLOWING ACUTE AND SUBCHRONIC EXPOSURE TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD). B P Slepak, G E Hatch, M Devito, J J Diliberto, R Slade, K Crisman and L S Birnbaum. Curriculum in Toxicology, UNC, Chapel Hill, NC; *US EPA, NIEHSL/ETD/PTB, Research Triangle Park, NC; *US EPA, NIEHSL/ETD/PKB, Research Triangle Park, NC.

INTERFERON-Υ ABROGATES CYPIA1 mRNA EXPRESSION IN MURINE SPLENOCYTES FOLLOWING TCDD EXPOSURE. R S Marcus, M P Hotzapple and N E Kaminski. Michigan State University, East Lansing, MI; Dow Chemical Company, Midland, MI.


TCDD AND OTHER AH-RECEPTOR AGONISTS ARE POTENT ANTI-ESTROGENS IN CULTURED CARP HEPATOCYTES. M van den Berg, J M W Smeets, C W M van Holstein, J Komen, K M Nichols, N E Kaminsky, J P Giesy and W Seinen. Research Institute of Toxicology, Utrecht University, Utrecht, the Netherlands; Agricultural University Wageningen, Animal Sciences, Wageningen, The Netherlands; Michigan State University, Fisheries and Wildlife, East Lansing, MI; Michigan State University, Pharmacology and Toxicology, East Lansing, MI.


ISOLATION AND EXPRESSION OF TWO RAINBOW TROUT ARYL HYDROCARBON RECEPTOR cDNAs WITH DISTINCT FUNCTIONS. C C Abnet, R L Tanguay, M E Hahn and R E Peterson. Environmental Toxicology Center and School of Pharmacy, University of Wisconsin, Madison, WI; Woods Hole Oceanographic Institution, Woods Hole, MA.

TEMPORAL AND SPATIAL EXPRESSION OF zfArK2, zfArNT2 and zfF450A mRNA IN DEVELOPING CONTROL AND TCDD-TREATED ZEBRAFISH. E A Andreassen, R L Tanguay, W Heideman and R E Peterson. Environmental Toxicology Center and School of Pharmacy, University of Wisconsin, Madison, WI.

ISOLATION AND EXPRESSION OF TWO ZEBRAFISH ARYL HYDROCARBON RECEPTOR NUCLEAR TRANSLATOR (ARNT2) cDNAs WITH DISTINCT FUNCTIONS. R L Tanguay, W Heideman, D Neshi and R E Peterson. Environmental Toxicology Center and School of Pharmacy, University of Wisconsin, Madison WI.

INTERSPECIES COMPARISON OF ARYL HYDROCARBON RECEPTOR (AhR) ACTIVITY IN A TRANSACTIVATION ASSAY. W Heideman, C C Abnet, R L Tanguay and R E Peterson. Environmental Toxicology Center and School of Pharmacy, University of Wisconsin, Madison WI.

ACTIVATION OF REDOX-CONTROLLED TRANSCRIPTION FACTORS BY TCDD. S J Barnes, C Y Chang, H Zhu, K P Nephew, S A Khan, H G Shertzer and A Pugs. Department of Environmental Health and Department of Cell Biology, Neurobiology and Anatomy, University of Cincinnati Medical Center, Cincinnati, OH.


GENOTOXICITY STUDIES WITH BINARY, TERTIARY AND ISOLATED FRACTIONS OF COMPLEX ENVIRONMENTAL MIXTURES. K C Donnelly, M Mumtaz, W R Reeves and S Safe. Texas A&M University, College Station, TX; Agency for Toxic Substances & Disease Registry, Atlanta, GA.

NUCLEAR RECEPTOR COREPRESSOR INTERACTIONS WITH AhR RECEPTOR SIGNALING. J-G Lee, T A Nguyen and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

PRO-OXIDANT METALS UNCOUPLE THE COORDINATE EXPRESSION OF PHASE I AND PHASE II GENES BY AhR RECEPTOR LIGANDS. A Maier and A Pugs. University of Cincinnati Medical Center, Department of Environmental Health, Cincinnati, OH.
#302 MOLYBDATE INHIBITION OF ARYL HYDROCARBON RECEPTOR ACTIVATION. S E Heid1, R S Pollenz2 and H J Swanson1. 1Department of Pharmacology, College of Medicine, University of Kentucky, Lexington, KY; and 2Department of Biochemistry, Medical University of South Carolina, Charleston, SC.

#303 ALTERATION OF OXYTOCIN- AND VASOPRESSIN-INDUCED CALCIUM OSCILLATIONS IN A RAT LIVER CELL LINE BY TCDD. Y Mouneimne, R Barhouni, T D Phillips, S H Safe and R C Burghardt. Faculty of Toxicology, Texas A&M University, College Station, TX.

#304 ISOLATION AND CHARACTERIZATION OF NOVEL ARNT-INTERACTING PROTEINS. C M Sadek1, S Jalaguier1, E P Feeney1, M Aitoa2, M Pelto-Huikko2 and J-A Gustafsson3. 1Center for Biotechnology and 3Department of Medical Nutrition, NOVUM, Karolinska Institute, Huddinge, Sweden; 2Department of Anatomy, Tampere University Medical School, Tampere, Finland.

#305 THE LACK OF ALDH3A1 INDUCTION BY TCDD IN CORNEAL EPITHELIAL CELLS MAY INVOLVE TISSUE-SPECIFIC REGULATORY PROTEINS THAT COMPETE WITH THE AHRR-ARNT COMPLEX. V Vasiliou and T Shiao. Molecular Toxicology and Environmental Health Sciences, Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.

#307 SMOKELESS TOBACCO INDUCED MODULATION OF p53 GENE AND PROTECTIVE EFFECT OF ANTIOXIDANTS. M Bagchi1, S S Joshi2, D Bagchi3, X Ye1, and S J Sloet. 1Creighton University School of Pharmacy and Allied Health Prof., Omaha, NE; 2University of Nebraska Medical Center, Omaha, NE.

#308 IN VITRO RESPONSE OF MOUSE OVARIAN SMALL FOLLICLES TO EPOXIDES OF 1,3-BUTADIENE. E A Cannady, I G Sipes and P B Hoyne. The Departments of Physiology and Pharmacology/Toxicology, The University of Arizona, Tucson, AZ.

#309 THE RELATIVE TOXICITY OF PARTICLES IN RAT LUNG TISSUE SLICE CULTURES. R A Westhouse1,2, F F Hahn1,2, A H Rebar2 and N F Johnson1,2. 1Lovelace Respiratory Research Institute, Albuquerque, NM; 2Purdue University, West Lafayette, IN.

#310 THE RELATIVE TOXICITY OF PARTICLES IN A549 CELL CULTURES. N F Johnson1,2, R A Westhouse1,2, F F Hahn1,2, A H Rebar2 and K J Nikula1. 1Lovelace Respiratory Research Institute, Albuquerque, NM; 2Purdue University, West Lafayette, IN.

#311 ANALYSIS OF DIFFERENCES IN THE MECHANISM OF TOXICITY OF ORTHO- AND PARA-ISOPROPYLPHENOL ISOMERS IN CULTURED RAT LIVER CELLS USING KINETIC FLUORESCENCE BIOASSAYS. D C Thompson, R Barhouni and R C Burghardt. Texas A&M University, College Station, TX.

#312 BIDRIN-INDUCED RENAL TUBULAR CYTOTOXICITY: ROLE OF OXIDATIVE STRESS AND ANTIOXIDANT PROTECTION. V S Poovaiah1,2 and A K Salahudeen1. 1Jackson State University, Jackson, MS; 2Toxikorn Corporation, Bedford, MA; 3University of Mississippi Medical Center, Jackson, MS. Sponsor: F W Deckert.


EXPRESS IS OF HUMAN MICROSOMAL EPOXIDE HYDROLASE PROTECTS AGAINST AFLATOXIN BI-INDUCED GENOTOXICITY IN YEAST CO-EXPRESSING HUMAN CYPIA ENZYMES. E J Kelly, C Sengstak, and D L Eaton. 
Center for Ecogenetics and Environmental Health, Department of Environmental Health, University of Washington, Seattle, WA; 2Institute of Toxicology, Swiss Federal Institute of Toxicology, Schwerzenbach, Switzerland.

SPECIES DIFFERENCES IN KUPFFER CELL-MEDIATED CYTOTOXICITY. T Hamano, V Tong, T Murase, E Tanaka, J Dabbs, and C A Tyson. 
1Toxicology Laboratory, Yokohama Research Center, Mitsubishi Chemical Company, Tokyo, Japan; 2University of British Columbia, Vancouver, BC, Canada; 3SRI International, Menlo Park, CA.

TOXICITY OF 1,3,5-TRINITROTOLUENE (TNB) ON ASTROCYTES AND ENDOThelial CELLS. E L Stairs, S Kunuvilla, S Kim, G Reddy, and C W Qualls Jr. 
1Department of Anatomy, Pathology and Pharmacology, Oklahoma State University College of Veterinary Medicine, Stillwater, OK; 2US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD.

EVALUATION OF TWO IN VITRO CILIATED EPITHELIAL SYSTEMS, DOG TRACHEA AND FROG PALATE, FOR POTENTIAL AS SCREENS FOR ACUTE INHALATION TOXICITY. J M Swann, J R Kennedy, and T W Schultz. 
1Iowa State Community College, Fulton, MS; 2The University of Tennessee, Knoxville, TN; 3The University of Tennessee College of Veterinary Medicine, Knoxville, TN. Sponsor: W Forkas.

DETERMINATION OF IN VITRO DOSIMETRY FOR EXPOSURES OF PRIMARY RAT HEPATOCYTE CULTURES TO GLYCOL ETHER BASED COMPOUNDS. K T Geiss, D L Pollard, J M Frazier. 
Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH.

TESTING OF GENETICALLY MODIFIED BACULOVIRUSES AND ESTABLISHED HUMAN CELL LINE. K Won-Kim and M L Taylor. 
Haskell Laboratory for Toxicology and Industrial Medicine, DuPont Company, Newark, DE. Sponsor: M W Himmelstein.

IN VITRO MODEL FOR INVESTIGATION OF COMPLEMENT ACTIVATION BY A PHOSPHOROTHIOATE OLIGODEOXYNUCLEOTIDE. S P Henry, M Jagels, T Hugli, R S Geary, A A Levin. 1Isis Pharmaceuticals, Inc. Carlsbad, CA; 2Scripps Research Institute, La Jolla, CA.

DEVELOPMENT OF A HIGH-THROUGHPUT SCREENING ASSAY FOR HUMAN HEPATOTOXICITY. A P Li, J A Brent, P M Silber, and C E Ruegg. 
1In Vitro Technologies, Inc., Baltimore, MD.

NOVEL HIGH THROUGHPUT FLUORESCENT CYTOCHROME P450 ASSAYS. C L Crespi, V P Miller, J M Ackermann, D M Stresser, and W F Busby. 
1Jr. GENTEST Corporation, Woburn, MA.

QUANTITATION OF HUMAN FLAVIN-CONTAINING MONOOXYGENASES ON IMMUNOBLOTS. E L Code, J McNamara, and C L Crespi. 
GENTEST Corporation, Woburn, MA.

DEVELOPMENT OF A RAINBOW TROUT RECOMBINANT CHIMERIC RECEPTOR REPORTER BIOASSAY TO SCREEN FOR THE POTENTIAL ESTROGENICITY OF ENVIRONMENTAL CONTAMINANTS IN FISH. J H Clemons, J B Matthews, and T R Zacharewski. 
Department of Biochemistry, Michigan State University, East Lansing, MI.

Rhone-Poulenc Rorer SA, Nonclinical Safety Assessment and Drug Metabolism, Vitry sur Seine, France.

DETERMINING RELATIVE ESTROGENICITY BY QUANTIFYING VITELLOGENIN INDUCTION IN RAINBOW TROUT LIVER SLICES. A D Shilling and D E Williams. 
Department of Environmental and Molecular Toxicology and Marine/Freshwater Biomedical Sciences Center, Oregon State University, Corvallis, OR.

DEVELOPMENT OF OPTIMAL CONDITIONS FOR THE CULTURE OF PRECISION-CUT RAT LIVER AND LUNG SLICES. A B Renwick, P T Barton, R J Price, and B G Lake. 
MAINTENANCE AND INDUCTION OF CYTOCHROME P-450 (CYP) ISOFORMS IN CULTURED PRECISION-CUT HUMAN LIVER SLICES. B G Lake¹, P S Watts², R J Edwards², A R Boobis², J M Tredger³, A B Renwick¹ and R J Price¹.
¹BIBRA International, Carshalton, Surrey, England; ²Imperial College School of Medicine, Hammersmith Hospital, London, England and ³Institute of Liver Studies, King's College School of Medicine and Dentistry, London, England.

SODIUM ARSENITE TOXICITY IN PRECISION-CUT RAT LUNG SLICES. J B Wijeweera and R C Lantz. Department of Cell Biology and Anatomy, University of Arizona, Tucson, AZ.

LIVE TIME EVALUATION OF CELL TOXICITY IN PRECISION-CUT TISSUE SLICES USING CONFOCAL MICROSCOPY. D Cromey, R C Lantz, C Rocha, A R Parrish and A J Gandolfi. Southwest Environmental Health Science Center, University of Arizona, Tucson, AZ.

ESTABLISHMENT OF PRECISION-CUT HUMAN PROSTATE SLICES AS AN IN VITRO TOXICOLOGY MODEL. R B Nagle¹, A Criss², B Dalkin³ A R Parrish¹ and A J Gandolfi¹. Southwest Environmental Health Science Center, Departments of Radiation Oncology and Surgery, University of Arizona, Tucson, AZ.

DERMAL ABSORPTION AND TOXICITY OF JET FUELS. J E Riviere¹, N A Monteiro-Riviere¹, J D Brooks¹, K Budashe² and C Smith². ¹Cutaneous Pharmacology and Toxicology Center, Department of Statistics, North Carolina State University, Raleigh, NC.

PREDICTION OF SKIN PERMEABILITY COEFFICIENTS OF VOLATILE ORGANIC CHEMICALS FROM INFORMATION ON THEIR MOLECULAR STRUCTURE. K Krishnan¹ and P Poulin². ¹TOXHUM, Université de Montréal, Montréal, Canada, ²Hoffmann-La Roche, Ltd., Basel, Switzerland.

PENETRATION GRADIENTS OF NICKEL SALTS ABSORBED IN HUMAN STRATUM CORNEUM IN VIVO. J J Hostyne, T Nakada, F Dreher, D A Schwindt and H I Maibach. School of Medicine, Department of Dermatology, University of California, San Francisco, CA.

IN VIVO DECONTAMINATION OF METHYLENE BISPHENYL ISOXYANATE (MDI): SOAP AND WATER INEFFECTIVE COMPARED TO POLYPROPYLENE GLYCOL, POLYGLYCOL-BASED CLEANER AND CORN OIL. X Hu¹, T Landry², H I Maibach¹ and R C Wester¹. ¹Department of Dermatology, University of California, San Francisco, CA and ²Health and Environmental Research Laboratory, The Dow Chemical Company, Midland, MI.

AN INNOVATIVE METHOD TO DETERMINE DERMAL UPTAKE OF SOLVENTS FROM SOIL AND WATER IN VIVO IN HUMANS. R C Wester¹, X Hu¹, H I Maibach¹, T S Poet², K K Weitz², J A Edwards², R A Corley² and K D Thrailick². ¹Department of Dermatology, University of California, San Francisco, CA and ²Pacific Northwest National Lab, Richland, WA.

ASSESSING THE DERMAL BIOAVAILABILITY OF VOLATILE ORGANICS IN RATS. T S Poet¹, R A Corley¹, K D Thrailick and R C Wester². ¹Pacific Northwest National Lab, Richland, WA and ²Department of Dermatology, University of California, San Francisco, CA.

DERMAL ABSORPTION OF N-METHYL-PYRROLIDONE (NMP) IN THE RAT. S V J Bounds¹, J Griffiths², T Mccarthy³, A Lorman² and R Parod². ¹Huntingdon Life Sciences, Eye Research Centre, Suffolk, UK; ²NMP Producers Group, Inc., Washington DC.

EFFECTS OF AN ALCOHOL DEHYDROGENASE INHIBITOR ON CINNAMALDEHYDE ABSORPTION AND BIOTRANSFORMATION IN HUMAN SKIN. C K Smith, A T S Smart and S A M Hotchkiss. Imperial College School of Medicine, London, UK. Sponsor: R A Ford.

PERCUTANEOUS ABSORPTION AND METABOLISM OF BUTOXETHANOL IN RAT D J Lockley1, D J Sanders2, H J Minter2 D Howes2 and F M Williams1. 1Department of Environmental and Occupational Medicine, Medical School, Newcastle University, Newcastle, UK; 2SEAC Toxicology Unit, Unilever Research, Cilworth House, Sharnbrook, Bedford, UK. Sponsor: E Lock.

DERMAL ABSORPTION AND CUTANEOUS DISPOSITION OF 3,3',4,4'-TETRACHLOROBIPHENYL (TCB) IN A SWINE MODEL. G L Qiao1, J D Brooks2 and J E Riviere3. 1EAB/HELD, National Institute for Occupational Safety and Health (NIOSH), Morgantown, WV; 2Cutaneous Pharmacology and Toxicology Center, North Carolina State University, Raleigh, NC.

COMPARISON OF PERCUTANEOUS ABSORPTION CHARACTERISTICS FOR TWO STRUCTURALLY RELATED DIRECT HAIR DYES, HC BLUE NO. 1 AND HC BLUE NO. 2, IN VITRO AND IN VIVO. W E Dressler, R S Grabarz and R K Sharma. Bristol-Myers Squibb Worldwide Beauty Care Research and Development, Stamford, CT.

IN VITRO PERCUTANEOUS ABSORPTION AND METABOLISM OF 2-NITRO-O-PHENYLENEDIAMINE IN HUMAN AND FUZZY RAT SKIN. J J Yourick and R L Brnaugh. Office of Cosmetics and Colors, Food and Drug Administration, Laurel, MD.

NATURAL RUBBER LATEX PROTEIN PENETRATION AND LOCALIZATION IN ANIMAL AND HUMAN SKIN. B B Hayes1,2, A E Munson1, and B J Meade1. 1National Institute for Occupational Safety and Health (NIOSH), Health Effects Laboratory Division, Morgantown, WV; 2Virginia Commonwealth University, Richmond, VA.

IMMUNOCHEMICAL DETECTION AND LOCALIZATION OF ALDEHYDE DEHYDROGENASE ISOZYMES IN HUMAN AND RODENT SKIN. C Cheung and S A M Hotchkiss. Imperial College School of Medicine, London, UK. Sponsor: R A Ford.

FLUOROQUINOLONE ANTIMICROBIAL (FQA) TOXICOKINETICS IN MURINE SKIN AND BLOOD: ANALYTICAL METHODS, SKIN CONCENTRATION AND PHOTOTOXICITY RELATIONSHIPS. D B Leam1, M Netach2, J Jersey2, J Amin2, R Hilla2, M Coacho2, C P Sambuc2 and P D Forbes1. 1Primedica/Argus Research Laboratories, Horsham, PA; 2Primedica/Mason Laboratories, Worcester, MA.

OCULAR AND DERMAL PHOTOTOXICITY INDUCED BY A SINGLE 8-METHOXY-PSORALEN (8-MOP) AND SIMULATED SUNLIGHT EXPOSURE IN ALBINO AND PIGMENTED RATS. C P Sambuc2, T E McCullough1, D B Leam2 and P D Forbes2. 1Cerus Corporation, Concord, CA; 2Primedica/Argus Research Laboratories, Horsham, PA.

PHOTODYNAMIC ACTIVATION OF TOPICAL ATMoph BY UVA OR RED LIGHT IN RABBITS AND MINISWINE. W Dairman1, C Sambuco1, J Wedge2 and D DeMagistri3. 1Wallace Dairman Associates, Manahawkin, NJ; 2Primedica-Argus, Horsham, PA; 3Cerus Corporation, Redfield, Redfield, AR; 4Glaxo Wellcome Inc., Research Triangle Park, NC.

NINETY DAY DERMAL TOXICITY STUDY OF 1-(3-CYCLOHEXEN-1-YLCARBONYL)-2-METHYL PIPERIDINE IN RATS. J T Houpt and H L Snodgrass. US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD. Sponsor: G J Leach.

ADVERSE RESPONSES TO SEMISYNTHETIC METAL WORKING FLUIDS IN B6CF1 MICE. N H Al-Humadi, C Kommineni, A A Shvedova, L Battelli and V Castranova. Health Effects Laboratory Division, NIOSH, CDC, Morgantown, WV.

RESTRAINT STRESS DIFFERENTIALLY AFFECTS CYTOKINE PRODUCTION AND EAR SWELLING IN ALLERGIC CONTACT DERMATITIS (ACD) AND IRRITANT CONTACT DERMATITIS (ICD). M C Flint, D B Miller and S S Tinkle. National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV.
USE OF GREEN FLUORESCENT PROTEIN IN A HUMAN ORGANOTYPIC STRATIFYING SQUAMOUS EPITHELIUM FOR MOLECULAR AND PHARMACOLOGICAL STUDIES OF NORMAL AND MALIGNANT EPITHELIAL GROWTH. M A Pickart, S J Lilienstein, A Aumock, N N Reagans, P M Harari and B L Allen-Hoffmann. University of Wisconsin Medical School, Madison, WI.

2,3,7,8-TRICHLORODIBENZO-P-DIOXIN (TCDD) CAUSES ALTERATIONS IN DIFFERENTIATION OF KERATINOCYTES IN ORGANOTYPIC CULTURE. J A Loertscher, C A R Ivarie, M A Weitzel and B L Allen-Hoffmann. Environmental Toxicology Center and Department of Pathology, University of Wisconsin-Madison, Madison, WI.


BIOTRANSFORMATION AND CYTOTOXICITY OF SULFAMETHOXAZOLE (SMX) AND DAPSONE (DDS) IN NORMAL HUMAN-NEONATAL EPIDERMAL KERATINOCYTES (NHKEK). T P Reilly, P M Woster and C K Svensson. Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI.

COMPARISON OF DERMAL CORROSION VALUES FOR SELECTED INDUSTRIAL CHEMICALS USING CORROSITEX. J L Stobbe1, K D Drake1, K J Maier2. 1Buckman Laboratories International, Memphis, TN; 2University of Memphis, Memphis, TN.

FURTHER EVALUATION OF THE EPIDERM™ AND EPIOCULAR™ IN VITRO IRRITATION MODELS. S C Nicastro and G S Ladies. The DuPont Company, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

A STRUCUTRE-ACTIVITY RELATIONSHIP (SAR) MODEL FOR ESTERS THAT CAUSE HUMAN SKIN IRRITATION. J S Smith, O T Macina, N B Sussman and M H Karol. Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.


SKIN IRRITATION POTENTIAL OF N,N'-DI(2-HYDROXYBENZYL)ETHYLENE-DIAMINE-N,N'-DIACETIC ACID (HBEA) IN RATS. D G Fainchild, K S Cook, J M Brune and C A Tyson. SR1 International, Menlo Park, CA.

INHIBITION OF NEUROGENIC INFLAMMATION BY PEPTIDES FROM MONOSTROMA GRAVILLI. R Enneman1,2, F Richeux1,2, N Mekidech3, D Saboureaux1 and E E Creppy2. 1Palmer Research, Arbor, France; 2Laboratory of Toxicology and Applied Hygiene, University Victor Segalen Bordeaux-Bordeaux, France; 3SECMA, Marine Biotechnology, Pontoix, France.

LOCALIZATION OF EPIDERMAL-DERMAL JUNCTION EPITOPES IN THE MOUSE EAR VESICANT MODEL EXPOSED TO BIS (2-CHLOROETHYL) SULFIDE. N A Monteiro-Riviere1, A O Inman1, M C Babin2 and R P Casillas2. 1Cutaneous Pharmacology and Toxicology Center, North Carolina State University, Raleigh, NC; 2US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

DETECTION OF PROLIFERATING CELL NUCLEAR ANTIGEN IN THE MOUSE EAR VESICANT MODEL FOLLOWING EXPOSURE TO BIS (2-CHLOROETHYL) SULFIDE. A O Inman1, N A Monteiro-Riviere1, M C Babin2 and R P Casillas2. 1Cutaneous Pharmacology and Toxicology Center, North Carolina State University, Raleigh, NC; 2US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

SYSTEMIC ADMINISTRATION OF CANDIDATE ANTIVESICANTS TO PROTECT AGAINST TOPICALLY APPLIED SULFUR MUSTARD IN THE MOUSE EAR VESICANT MODEL (MEVM). M Babin1, K K Ricketts1, J P Skvorak1, M Gazaway1, L W Mitchell2 and R P Casillas1. 1Drug Assessment and 2Comparative Medicine Divisions, United States Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: J A Romano.

PROTEIN PHOSPHATASE 2A IDENTIFIED AS THE CYTOSOLIC ENZYME INHIBITED BY THIODIGLYCOL, THE HYDROLYSIS PRODUCT OF SULFUR MUSTARD. A A Brinfield. U S Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

CHARACTERIZATION OF NERVE AGENT PENETRATION THROUGH PORCINE AND HUMAN SKIN AND THE EFFICACY OF A FIELDED DECONTAMINANT. T H Snider1, J D Waugh1 and J P Skvorak2. 1 Battelle Memorial Institute, Columbus, OH; 2 US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: C T Olson.

COMPARING OCCUPATIONAL AND ENVIRONMENTAL RISK ASSESSMENT METHODOLOGIES USING PHARMACOKINETIC MODELING. L M Sweeney. Concurrent Technologies Corporation, Johnstown, PA.


DETERMINATION OF ACCEPTABLE EXPOSURE LIMITS FOR THE ANTI-VIRAL AGENT RIBAVIRIN. J Gandy1,2, S W Williams2, R Hill3 and P T Goad. 1 University Arkansas Medical Sciences, Little Rock, AR; 2 Center for Toxicology and Environmental Health, Little Rock, AR; 3 Hill Research Associates, Inc., Los Gatos, CA.

THE CONCENTRATION-EXPOSURE DURATION RELATIONSHIP FOR INHALED TOXICANTS. K A Davidson, S S Talmage, C B Bast, C S Forsyth, S Milanez, C M Trotel and R A Young. Toxicology and Risk Analysis Section, Life Science Division, Oak Ridge National Laboratory, Oak Ridge, TN.

RE-EVALUATING CANCER RISK ESTIMATES FOR SHORT-TERM EXPOSURE SCENARIOS. N C Halms1, J K Tolson1, C J Porter2 and S M Roberts1. 1 Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL; 2 National Institute for Environmental Health Sciences, Research Triangle Park, NC.


TOXIC EQUIVALENCY (TEQ) OF POLYCHLORINATED DIRENZO-DIOXINS (PCDDS) IN AN OVULATION MODEL: VALIDATION OF THE TEQ CONCEPT FOR ENDOCRINE DISRUPTION. X Gao1, D-S Son2, P F Terranova3,4 and K K Rozman1,5. 1 Department of Pharmacology, Toxicology & Therapeutics; 2 Center for Reproductive Sciences; 3 Department of Molecular & Integrative Physiology; 4 Department of Obstetrics & Gynecology, University of Kansas Medical Center, Kansas City, KS; 5 Section of Environmental Toxicology, GSF-Institut für Toxikologie, Neuherberg, Germany.


THE DEVELOPMENT OF THE CADMIUM DIETARY EXPOSURE MODEL (CDEM). T F Lockwood1,2, G L Diamond3, H C Choudhury3, J M Hassett2, P E Goodrum1 and W M Stielert1. 1Syracuse Research Corporation, North Syracuse, NY; 2State University of New York College of Environmental Science and Forestry, Syracuse, NY; 3National Center for Environmental Assessment, USEPA, Cincinnati, OH.

DEVELOPMENT OF COPPER TOXICITY VALUES FOR HUMAN HEALTH RISK ASSESSMENT. B D Beck, H E Daly and T M Slayton. Gradient Corporation, Cambridge, MA.


EFFECTS OF POLYMORPHISM OF GLUTATHIONE TRANSFERASE THETA ON THE RISK ESTIMATE OF DICHLOROMETHANE IN HUMANS. H A El-Masri, D A Bell and C J Portier. Laboratory of Computational Biology and Risk Analysis, NIEHS, NC. Sponsor: B J Ghanayem.

USING PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING TO ASSESS NON-LINEARITY IN THE DOSE-RESPONSE RELATIONSHIP FOR METHYlene CHLORIDE CARCINOGENESIS. C R Kirman1, S M Hays1, M L Gargas1, M E Andersen1, R H Reitz2, F P Guengerich4, T Green5, E E McConnel6, A Buckpitt7, P Voytek8 and P H Dugard9. 1McLaren-Hart/ChemRisk, Cleveland, OH; 2ICF Kaiser, Research Triangle Park, NC; 3HRJ Toxicology Consulting, Midland, MI; 4Vanderbilt University, Nashville, TN; 5Zenaica, Cheshire, England; 6Tox Path, Inc., Raleigh, NC; 7University of California, Davis, CA; 8Regulatory Sciences International, Alexandria, VA; 9Halogenated Solvents Industry Alliance, Washington, DC.


DEVELOPMENT OF INHALATION AND ORAL BENCHMARK DOSES FOR TRICHLOROETHYLENE BASED ON CARCINOGENICITY IN MICE. C J Saranko1, R L Sielken2, P S Gazelle3, R C James4 and S M Roberts5. 1Center for Environmental & Human Toxicology, University of Florida, Gainesville, FL; 2Sielken Inc., Bryan, TX; 3Department of Medical Toxicology, University of Colorado, Denver, CO; 4TERRA Inc., Tallahassee, FL.

AN AMBIENT AIR GUIDELINE FOR TETRACHLOROETHENE BASED ON NON-Oncogenic EFFECTS IN HUMANS. K G Bogdan, A J Grey and D Luttinger. Center for Environmental Health, New York State Department of Health, Albany, NY. Sponsor: R Seegal.


DEVELOPMENT OF AN RFD FOR DICAPRYLPHOSPHATE USING DATA FROM STRUCTURE-ACTIVITY RELATIONSHIPS AND IN VITRO STUDIES. I S Chaudhuri. ENSR, Corporation, Acton, MA.

FORMALDEHYDE RISK ASSESSMENT BY BENCHMARK DOSE ANALYSIS USING DNA-PROTEIN CROSS-LINKS AS AN INTERNAL DOSE METRIC. P M Schlesser1, D B Janssen1, J S Kimbell1 and P D Lilly1,2. 1Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 2Boehringer Ingelheim Pharmaceuticals, Ridgefield, CT.

CLONAL GROWTH MODELS AND CANCER RISK ASSESSMENT: SIGNIFICANCE OF THE TUMOR GROWTH RATE FOR INTERSPECIES SCALE-UP. R Conolly. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

EPOXY RESINS AND POLYAMINE DERMAL AND SYSTEMIC TOXICITY. T T Martinez. St. Louis College of Pharmacy, St. Louis, MO.

THE EFFECT OF AGING IN SOIL ON THE DERMAL BIOAVAILABILITY OF MERCURY. R M Turkall, G A Skowronski and M S. Abdel-Rahman. University of Medicine and Dentistry of New Jersey/New Jersey Medical School, Newark, NJ.

AN ALTERNATE VIEW OF DERMAL ABSORPTION OF HEXACHLOROBENZENE FROM SOIL. M A Katona1, T P Long1, C R Kirman1, E S Golpashin2, M A Bon1 and M L Gargas1. 1ChemRisk, A Service of McLaren/Hart, Inc., Cleveland, OH; 2McLaren/Hart, Inc., Irvine, CA.
EFFECT OF TEMPORAL ASSUMPTIONS ON RISK ASSESSMENTS FOR DERMAL TOXICITY. J N McDougall, J L Jurgen, and W H Weisman. Geo-Centers, Inc., Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH.


CATEGORICAL REGRESSION ANALYSIS OF BROMODICHLOROMETHANE (BDCM) LIVER TOXICITY AND PATHOLOGY DATA. L K Teuschler, J E Simmons, W R Hartley, A Thyagarajah, and J C Lipscomb. NCEA, US EPA, Cincinnati, OH; NHEERL, US EPA, Research Triangle Park, NC; Tulane University Medical Center, New Orleans, LA.


COMPARATIVE RISKS OF DRINKING WATER TREATMENT SYSTEMS. G Rice, L K Teuschler, and J C Lipscomb. US EPA, National Center for Environmental Assessment, Cincinnati, OH.


USE OF HUMAN DATA IN THE HEALTH ASSESSMENT OF DIMETHYLAMINE (DMA). E C Bistinger. Calgon Corporation, Pittsburgh, PA.


INVOLVEMENT OF CASPASE-3-LIKE ACTIVITY IN CYANIDE-INDUCED NEURONAL APOPTOSIS. P G Gunasekar, S Yan, J L Borowitz and G E Isom. Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

PYRIDOSTIGMINE-INDUCED ACUTE AND DELAYED NEURONAL APOPTOSIS. J Li, P G Gunasekar, J L Borowitz and G E Isom. Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

MODULATION OF NEURONAL APOPTOSIS BY AN INTERACTION BETWEEN TNFa AND NGF SIGNAL CASCADES. N J Macdonald, F Decorti, T C Pappas and G Tagliafietta. Departments of Neuroscience, Human Biological Chemistry and Genetics and Internal Medicine, The University of Texas Medical Branch at Galveston, TX. Sponsor: M T Moslen.

APOPTOSIS INDUCED BY ETHANOL AND SERUM DEPRIVATION ARE MECHANISTICALLY DISTINCT. J Oberdoerster and R A Rabin. Department of Pharmacology & Toxicology, School of Medicine & Biomedical Science, University at Buffalo, Buffalo, NY.

CHARACTERIZATION OF DOPAMINE-INDUCED Expression of GADD45 AND GADD153 IN HUMAN NEUROBLASTOMA CELLS. K E Vrana, W M Freeman, M Aschner, W G Jerome III, K W Grant and A H Stokes. Wake Forest University School of Medicine, Winston-Salem, NC.

OVER-EXPRESSION OF CYCLIN D1 AND METALLOTHIONEIN AND CELL KINETICS IN THE EARLY PROCESS OF URINARY BLADDER CARCINOGENESIS INDUCED BY TREATMENT WITH N-BUTYL-N-(4-HYDROXYBUTYL) NITROSAMINE OR SODIUM L-ASCORBATE. K Takaha1,2, K Saeki1, K Suzuki1, H Wamibuch2 and S Fukushina2.
1Toxicology Research Laboratory, Kyowa Hakko, Yamaguchi, Japan; 2Department Pathology, Osaka City University Medical School, Osaka, Japan.

ROLE OF OXIDATIVE STRESS IN CHROMIUM(VI)-INDUCED APOPTOSIS IN NORMAL HUMAN LUNG CELLS. J Singh1, D E Pritchard1, D L Carlisle1, J A McLean2, A Montaser2, V Hu1 and S R Paterno1. Departments of 1Pharmacology, 2Chemistry and 3Biochemistry, George Washington University Medical Center, Washington, DC.

APOPTOSIS A POTENTIAL MECHANISM OF APOPTOSIS IN GERM CELL DEATH IN MERCURIC CHLORIDE INDUCED REPRODUCTIVE TOXICITY. A Atkinson, A Khan, T Graham, S Thompson, K Ali, S Husseini and S Ali. CVMMNAH, Tuskegee University, Tuskegee, AL.

EPOXYBUTENE AND DIEPOXYBUTANE INDUCE APOPTOSIS IN MOUSE THYMOCYTES THROUGH DIFFERENT PATHWAYS. C M Zwick1, J E Klun1 and D Wieda1. Eli Lilly and Company, Greenfield, IN, 2Indiana University School of Medicine, Indianapolis, IN.

CELL DEATH OF HUMAN HT29 COLON CARCINOMA CELLS IS ACTIVATED BY CANCER PREVENTIVE DETOXIFICATION ENZYME INDUCERS. W G Kirlin1, J Cai2, M J DeLong1, E J Patten1, Y G Wissj1 and D P Jones2. 1Morehouse School of Medicine, Atlanta, GA; 2Emory University School of Medicine and 3School of Public Health, Atlanta, GA.

SIGNAL TRANSDUCTION IN PAF-INDUCED PREB CELL APOPTOSIS. S A Quadri, A N Quadri and D H Sherr. Department of Environmental Health, School of Public Health, Boston University Medical Center, Boston, MA.

THE ROLE FOR APOPTOSIS IN THE CYTOTOXIC RESPONSE TO KEY MILITARY COMPOUNDS. D S Rosenthal1, C M Simbulan-Rosenthal1, H Boulares1, S Iyer1, W J Smith2, R Ray2 and M E Smulson1. 1Department of Biochemistry and Molecular Biology, Georgetown University School of Medicine, Washington, DC; 2USAMRICD, Aberdeen Proving Ground, MD. Sponsor: A R Sciulli.

ACETAMINOPHEN (APAP) INDUCES CLEAVAGE OF POLY(AD-RIBOSE) POLYMERASE (PARP) AND DNA-DEPENDENT PROTEIN KINASE (DNA-PK) BY ACTIVATING CAPSASES IN JURKAT T CELLS. A H Boulares, B A Stoica, S K Hasan, S Iyer and M E Smulson. Georgetown University, Department of Biochemistry and Molecular Biology, Washington, DC. Sponsor: A R Sciulli.

GENERATION AND DETECTION OF APOPTOSIS IN RAT LIVER SLICE. M K Chiikara, J S Petrick, A R Parrish and A J Gandolfi. Department of Anesthesiology, University of Arizona, Tucson, AZ.


URIDINE ADMINISTRATION DOES NOT PROTECT FROM GALACTOSAMINE-INDUCED HEPATOCYTHE APOPTOSIS IN RATS. J M McMillan. Department of Cell and Molecular Pharmacology and Experimental Therapeutics, Medical University of South Carolina, Charleston, SC.

DYSREGULATION OF APOPTOSIS BY c-myc IN TRANSGENIC HEPATOCYTES AND EFFECTS OF GROWTH FACTORS AND NONGENOTOXIC CARCINOGENS. J G Christensen1,2, T L Goldsworthy2 and R C Cattley2. 1Department of Toxicology, North Carolina State University, Raleigh, NC; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

POLY (ADP-RIBOSE) POLYMERASE MODULATORS 4-AMINOBENZAMIDE (AB) AND NICOTINAMIDE (NICO) PROTECT AGAINST ACETAMINOPHEN (AAP)-INDUCED HEPATOTOXICITY IN MICE BY INFLUENCING EXPRESSION OF BCL-XL AND P53. S D Ray, G Balasubramanian1, A Khander, C S Reddy1 and D Bagchi2. Department of Pharmacology, Toxicology & Medical Chemistry, College of Pharmacology and Health Sciences, Long Island University, Brookmyn, NY; 1Department of Vet. BioMedical Sciences, University of Missouri, Columbia, MO; 2Creighton University, College of Pharmacology and Allied Healh Prof., Omaha, NE.
ARYL HYDROCARBON RECEPTOR REGULATION OF CERAMIDE-INDUCED APOPTOSIS IN MURINE HEPATOMA CELLS. J J Reiners. Jr. and R S Chtft. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.

PARTICIPATION OF SERTOLI CELL-EXPRESSED FASL IN THE INITIATION OF GERM CELL APOPTOSIS IN YOUNG RAT TESTIS AFTER EXPOSURE TO MONO-(2-ETHYLHEXYL) PHTHALATE (MEHP). J H Richburg, K D Wurm, H Gao and A Nano. College of Pharmacy, Division of Pharmacology & Toxicology, The University of Texas, Austin, TX.

ALTERATIONS IN TESTICULAR CYTOSKELETAL AND SIGNALING PROTEIN DISTRIBUTION DURING GERM CELL DEATH. T Jindo, R Wine and R E Chapin. NTP/NIEHS, Research Triangle Park, NC.

INFLUENCE OF TAMOXIFEN ON HORMONALLY REGULATED CYTOCHROME P450 ENZYME EXPRESSION IN RATS. L M Ikemoto and S M Bandiera. Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada.

DETECTION OF CATECHOL ESTROGENS BY GAS CHROMATOGRAPHY/ELECTRON CAPTURE (GC-ECID). K Pinnella, J Tessari, B Cranmer and G Cosma. Department of Environmental Health, Colorado State University, Fort Collins, CO.

RAPID PURIFICATION OF BACULOVIRUS EXPRESSED HUMAN CYTOCHROME P450 AROMATASE BY PERFUSION CHROMATOGRAPHY. CA Garner, SJ Thompson, A E Rettie, N Harade and S D Nelson. 1Department of Medicinal Chemistry, University of Washington, Seattle, WA, 2Division of Molecular Genetics, Institute for Comprehensive Medical Science, Fujita Health University, Toyoake, Aichi, Japan.

FINGERPRINTING CYTOCHROME P450 AND mEH GENE EXPRESSION IN HUMAN LEUKEMIA CELL LINES. B C Krovat, J H Tracy and C J Omiecinski. University of Washington, Department of Environmental Health, Seattle, WA.

OXIDATIVE INJURY IN HUMAN BREAST TUMOR CELLS VIA CATECHOL ESTROGEN METABOLISM. C Dowell, G Cosma, A Scott, R Wells and H Gardner. 1Department Environmental Health, Colorado State University, Ft. Collins, CO; 2US Army Center Environ Health Research, Ft. Detrick, MD.

EFFECTS OF DDT ON THE HEPATIC METABOLISM OF TESTOSTERONE. A Sierra-Santoyo, A Albores and M E Celbran. Seccion de Toxicologia Ambiental, CINVESTAV-IPN, Mexico City, Mexico.

THE EFFECTS OF DIET RESTRICTION ON EXPRESSION OF HEPATIC CYTOCHROME P450 ENZYME mRNA LEVELS IN THE RAT. R Gilles, M Mitchell, C Alden, D Morris and J Davila. Monsanto Life Sciences Company, St. Louis, MO.

CYTOTOXICITY OF HCFC-123 IN ISOLATED RAT HEPATOCYTES. M Manno, R Ferrara, A Zanovello, S Bortolato and R Tolando. Intitute of Occupational Medicine, University of Padua, Padua, Italy. Sponsor: M Lotti.

SOCIETY OF TOXICOLOGY
38th Annual Meeting

#441 CYTOCHROME P450 INDUCTION IN PRECISION-CUT RAT LIVER SLICES EXPOSED TO 5-LIPOOXYGENASE (5-LO) INHIBITORS IN DYNAMIC ORGAN CULTURE. L-H Chi1, B P McGarrigle1, W P Beierschmitt2, M D Alco2 and J R Olson1. 1Department of Pharmacology and Toxicology, SUNY, Buffalo, NY; 2Drug Safety Evaluation, Pfizer, Inc., Groton, CT.

#442 EFFECT OF ORGANIC SOLVENTS ON IN VITRO cDNA-EXPRESSION HUMAN CYTOCHROME P450 ACTIVITIES W F Busby, Jr, J M Ackermann and C L Crespi. GENTEST Corporation, Woburn, MA.

#443 THE EFFECT OF LEPTIN ON CYTOCHROME P450, CONJUGATION and ANTI-OXIDANT ENZYMES IN THE OB/OB MOUSE. A M Watson, S M Poloyac, G Howard and R A Blouin. University of Kentucky, Graduate Center for Toxicology and College of Pharmacy, Lexington, KY.

#444 MOLECULAR CLONING, HETEROLOGOUS EXPRESSION, ENZYMATIC CHARACTERIZATION AND TISSUE DISTRIBUTION OF A NOVEL MOUSE CYTOCHROME P450. W Qu, J Ma and D C Zeldin. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#445 INDUCTION OF CYP2K1 EXPRESSION IN STARVED MUMMICHOG: A PROBLEM FOR USE AS A BIOMARKER OF PEROXSOME PROLIFERATION? M L Hoach and M F Johnston. Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, Solomons, MD.

#446 METABOLISM OF PHENANTHRENE BY HOUSE FLY CYP6D1 AND DOG MICROSOMES. P J Korytko1, F W Quimby2 and J G Scott2. 1Field of Environmental Toxicology, Center for the Environment, Cornell University, Ithaca, NY; 2Department of Veterinary Pathology, Field of Environmental Toxicology, Cornell University, Ithaca, NY; 3Department of Entomology, Cornell University, Ithaca, NY.

#447 ACETAMINOPHEN HEPATOTOXICITY CAUSED BY SHORT-TERM TREATMENT WITH ETHANOL PLUS ISOPENTANOL: PROTECTION BY TRICETYLOLEANDOMYCIN. J Sinclair1,2,3, J Szakacs4, S Wood1, V Kostrubsky6, E Jeffery6, S Wrighton2, D Wright1 and P Sinclair1,2,3. 1VA Medical Center, White River Junction, VT; Departments of 2Pharmacology/Toxicology and 3Biochemistry, Dartmouth Medical School, Hanover, NH; 4VA Medical Center, Salt Lake City, UT; 5Department Pathology, University of Pittsburgh Medical Center, Pittsburgh, PA; 6Inst. Environmental Studies, University Illinois, Urbana, IL; 7Department of Drug Disposition, Eli Lilly Research Laboratories, Indianapolis, IN.

#448 MULTIPLE FACTORS REGULATE PROMOTER ACTIVITY OF THE NADPH CYTOCHROME P450 OXIDOREDUCTASE GENE. K A O'Leary and C B Kasper. Mc Ardle Laboratory for Cancer Research, University of Wisconsin, Madison, WI. Sponsor: C A Bradfield.

#449 INFLAMMATORY CYTOKINE-MEDIATED DOWN REGULATION OF CYTOCHROME P450 BY POKEWEED MITOGEN IN MICE. H K Kim, C Y Choi and H G Jeong. Department of Biological Science, Chonnam University, Kwangju, Korea.

#450 EXPRESSON OF DRUG METABOLISM ENZYMES IN HUMAN RENAL PROXIMAL TUBULAR CELLS. B S Cummings1, J M Lasker2 and L H Lash1. 1Department of Pharmacology, Wayne State University School of Medicine, Detroit, MI; 2Department of Biochemistry, Mount Sinai School of Medicine, New York, NY.

#451 CYTOCHROME P450 INDUCTION BY p,p'-DDE IN THE DEER MOUSE, VOLE AND LABORATORY RAT. R L Dickerson and L T Frame. The Institute of Environmental and Human Health, Texas Tech University / Texas Tech University Health Sciences Center, Lubbock, TX.

#452 DIFFERENTIAL EXPRESSION OF CYTOCHROMES P450 1A1 AND 1B1 IN HUMAN LUNG FROM SMOKERS, NON-SMOKERS AND EX-SMOKERS. J H Kim1, M E Sherman2, P T Strickland1, F P Giengerich1 and F R Sutter1. 1Johns Hopkins School of Hygiene and Public Health, Baltimore, MD; 2Johns Hopkins School of Medicine, Baltimore, MD; 3Vanderbilt University School of Medicine, Nashville, TN.

#454 REGULATION OF CYPIA EXPRESSION BY NICOTINE IN THE RAT: DOSE- AND ROUTE OF EXPOSURE-DEPENDENCE. J Fung1, H Scholl1, Y Park1, P Thomas2, G Wagner3, A Halladay3, H Fisher4, J Alam5 and M M Iba5. Departments of 1Pharmacology, 2Chem. Biology, 3Psychology and 4Nutrition, Rutgers University, Piscataway, NJ; 5Ohsn Fdn. Hospital, New Orleans, LA.

#455 COMPARISON OF LOW-OXYGEN MEDIATED CYPIA1 INDUCTION IN 3 HEPATOMA CELL LINES. LT Frame, D Settachan and R L Dickerson. The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX.

#456 INDUCTION OF CYPIA1, CYPIA2 AND CYPIB1 IN PRECISION-CUT HUMAN LIVER SLICES BY 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN AND OMEFRAZOLE. A T Drahushuk1, M D Aleo2, B P McGarrigle1 and J R Olson1. 1Department Pharmacology and Toxicology, SUNY, Buffalo, NY; 2Drug Safety Evaluation, Pfizer, Inc., Groton, CT.

#457 SEA OTTER (ENHYDA LUTRIS) CYTOCHROME P450 1A GENE EXPRESSION IN PERIPHERAL BLOOD MONONUCLEAR CELLS AS A BIOMARKER OF EXPOSURE TO CRUDE OIL. P W Snyder1, T P Kondratyuk1 and J P Vanden Heuvel2. 1School of Veterinary Medicine, Purdue University, West Lafayette, IN; 2Department of Veterinary Science, Pennsylvania State University, University Park, PA.

#458 INHIBITION OF CYPIA1 ENZYME ACTIVITY IN MOUSE HEPATOMA CELL CULTURE BY SOYBEAN ISOFLAVONES. H G Shertzer1, A Puga1, C-y Chang1, P Smith1, D W Neber1, K D R Setchell2 and T P Dalton1. 1Department of Environmental Health/Center for Environmental Genetics and 2Department of Pediatrics, Children's Hospital Research Foundation, University of Cincinnati Medical Center, Cincinnati, OH.

#459 ETHANOL-MEDIATED INDUCTION OF CYPIA1/2 IN RAT SKELETAL MUSCLE. M R Miller, C Smith, S C Stamm, J E Riggs, W Stauber, V Harsh, and P M Garnett. West Virginia University Health Sciences Center, Morgantown, WV.

#460 IN VITRO INHIBITION BY PRENYLATED FLAVONOIDS OF HUMAN CYPIA2-MEDIATED METABOLISM OF ACETANILIDE AND AFLATOXIN B1. M C Henderson1, C L Miranda1, J F Stevens2, M L Deinzer2 and D R Bucher2. 1Departments of Environmental and Molecular Toxicology and 2Chemistry, Oregon State University, Corvallis, OR.

#461 CYPIA1 AND CYPIB1 IN BREAST CELL LINES. W G R Angus, M C Laren, L Zhang, S E Elton P P Hanlon and C R Jefcoate. Department of Pharmacology and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#461A MOLECULAR IDENTIFICATION OF CYTOCHROME P450 1B1 IN LIVER OF SCUP (STENOTOMUS CHRYSPUS) AND STRIPED DOLPHIN (STENELLA COERULEODALLI) AND CYTOCHROME P450 1A1 IN STRIPED DOLPHIN TESTIS. C A Godart1,2, M R Said1, M J Moore1, R L Dickerson2 and J J Stegeman1. 1Department of Biology, Woods Hole Oceanographic Institute, Woods Hole, MA; 2Department of Environmental and Human Health, Texas Tech University, Lubbock, TX.

MONDAY AFTERNOON, MARCH 15
1:30 PM - 4:30 PM
ERNIE N. MORAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: NEUROTOXICITY OF PESTICIDES
Chairpersons: Toshio Narahashi, Northwestern University, Chicago, IL and Catherine M. Kelly, Huntington Life Sciences, East Millstone, NJ
Displayed: 1:30 PM - 4:30 PM

Attended: 1:30 PM - 3:00 PM


#463 CHOLINESTERASE ACTIVITY: MUSCARINIC RECEPTOR RATIOS IN CANINE AND FELINE BRAINS. R R Dalefield and F W Oehme. Comparative Toxicology Laboratories, Kansas State University, Manhattan, KS.


#466 Influence of dithiocarbamates on the development of organophosphate induced delayed polyneuropathy (OPIDP). G. Gardiman, A. Meretoia and M. Lotti. Università di Padova, Padova, Italy.


#470 Comparative effects of paraoxon, chlorpyrifos oxon and muscarinic agonists on high affinity choline uptake in rat cortical and striatal synaptosomes. K. Olivier, J. Liu and C. Pope. Div. Toxicol., Northeast LA University, Monroe, LA.


#472 Differential alterations in cortical nicotinic receptor-mediated acetylcholine (ACh) release following in vivo and in vitro organophosphate (OP) exposure. P. R. Harp and C. N. Pope. Div. of Toxicology, Northeast Louisiana University, Monroe, LA.

#473 Comparison of neurochemical effects of chlorpyrifos and methyl parathion on the cholinergic system in early postnatal rats. J. Tang, R. L. Carr and J. E. Chambers. Center for Environ Health Sci, College of Veterinary Medicine, Mississippi State University, Miss State, MS.

#474 Effectiveness of detergent solubilization of cholinesterase from peripheral tissues in the rat. J. E. Chambers, J. S. Boone, R. L. Carr, P. D. Dass and I. P. Sheets. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS; Toxicology Department, Bayer Corporation, Stilwell, KS.

#475 Effects of DPX-1062 and DCJW on the neuronal nicotinic acetylcholine and GABA receptors in mammalian neurons. X. Zhao, K. Nagata, W. Marszalek, J. X. Zhao, K. Nagata, W. Marszalek, J. Z. Yeh and T. Narashiki. Department of Mol. Pharmacology and Biol. Chemistry, Northwestern University Medical School, Chicago, IL.

#476 Effects of the triazine herbicide cyanazine on GABA<sub>A</sub> receptor ligand binding to rat brain membranes and GABA-stimulated <sup>36</sup>Cl<sup>-</sup> flux in synaptoneurosomes. C. A. Meacham, R. R. Ward, R. L. Cooper and T. J. Shawe. Neurotoxicology and Reproductive Toxicology 1, Divisions, NHEERL, US EPA, Research Triangle Park, NC.

---

**MONDAY EVENING, MARCH 15**

4:00 PM - 6:00 PM
Hilton New Orleans Riverside Hotel

**SPECIALTY SECTION PRESIDENTS' MEETING**

---

**MONDAY EVENING, MARCH 15**

6:00 PM - 7:30 PM
Hilton New Orleans Riverside Hotel

**SPECIALTY SECTION MEETINGS:**
TUESDAY MORNING, MARCH 16
7:00 AM - 8:00 AM
HILTON NEW ORLEANS RIVERSIDE HOTEL
REGIONAL CHAPTERS PRESIDENTS' MEETING

TUESDAY MORNING, MARCH 16
8:00 AM - 8:30 AM
ERNST M. MORIAL CONVENTION CENTER
ROOMS R06-R08
BURROUGHS WELLCOME SCHOLAR AWARD
LECTURE. LESSONS LEARNED FROM STUDYING
TOXICANT-INDUCED IRREVERSIBLE TESTICULAR
INJURY.

Lecturer: Kim Boekelheide, Brown University, Providence, RI

In the last quarter century, our understanding of male reproductive biology and toxicology has advanced to the point where potential mechanisms of toxicant action can be proposed and tested. (Without too much laughter in the back of the room, this talk will highlight lessons learned from the mechanistic examination of 2,3-hexanedione-induced testicular injury, an intensely studied model system. LESSON #1: Hypotheses are both gross overgeneralizations and useful tools. Since 2,3-hexanedione exposure results in a relative specific injury of the nervous system and testis, while reacting globally with primary amine throughout the body, this requires an hypothesis by which a global modification can produce a specific injury. LESSON #2: The most exciting observations are those at odds with basic assumptions. The assumption that 2,3-hexanedione-induced irreversible testicular injury is a consequence of killing all the germ cells is just plain wrong. Primitive germ cells are present and happily proliferating after toxicant exposure—just die instead of mature. Furthermore, "irreversible" injury is reversible with appropriate hormonal manipulation, opening up new avenues for exploring the basic biology of spermatogenesis, and for treating idiopathic azoospermia. LESSON #3: Life is a balance. Sertoli cells not only make growth factors (i.e., stem cell factor) that support germ cells, these "nurse" cells also make death factors (i.e., Fas ligand) to kill germ cells. The goal of the presentation will be to make these specific realizations broadly generalizable.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
ERNST M. MORIAL CONVENTION CENTER
ROOMS R04-R05
SYMPOSIUM SESSION. MECHANISM OF ACTION
OF NICOTINE ON NEURONAL ACETYLCHOLINE
RECEPTORS. FROM MOLECULE TO BEHAVIOR

Sponsored By: The Neurotoxicology Specialty Section

Chairperson: Toshio Narahashi, Northwestern University Medical School, Chicago, IL

Nicotine has long been known to interact with nicotinic acetylcholine (ACh) receptors since Langley used it extensively to chart sympathetic ganglia a century ago. It has been used as an effective insecticide. However, it was not until the 1990's that the significance of nicotine was increasingly recognized from the toxicological, pharmacological and environmental points of view. This is partly because studies of neuronal nicotinic ACh receptors are rapidly coming out of obscurity as fueled by several lines of developments. Since Alzheimer's disease is known to be associated with down-regulation of the cholinergic activity in the brain, a variety of nicotine derivatives are being tested and developed for the treatment of the disease. Public awareness of the adverse effects of nicotine has reached the highest level recently. Since insect resistance to insecticides is one of the most serious issues in the pest control arena, it is urgently needed to develop newer insecticides that act on target sites not shared by the existing insecticides. The neuronal nicotinic ACh receptor is one of them, and new nicotinoids are being developed. Thus, it is ripe to discuss the mechanism of action of nicotine from a variety of angles including the molecular, physiological, and behavioral points of view. This is the major focus of the present Symposium.

#478 8:30 MECHANISM OF ACTION OF NICOTINE ON
NEURONAL ACETYLCHOLINE RECEPTORS:
FROM MOLECULE TO BEHAVIOR. T Narahashi,
Department of Molecular Pharmacology and
Biological Chemistry, Northwestern University
Medical School, Chicago, IL.

#479 8:40 REGULATION OF ACETYLCHOLINE
RECEPTOR DESENSITIZATION AT LOW
CONCENTRATIONS OF NICOTINE. R A J
Furster, C P Fenster, T Whitworth, M L Beckman and
M W Quick, Department of Neurobiology, University
of Alabama, Birmingham, AL, Sponsor: T Narahashi.

#480 9:10 INTERACTIONS OF NICOTINE AND
ALCOHOL AT NEURONAL NICOTINIC
ACETYLCHOLINE RECEPTORS. T Narahashi, W
Marszalec and G L Aistrup, Department of Molecular
Pharmacology and Biological Chemistry, Northwestern
University Medical School, Chicago, IL.

#481 9:40 NICOTINIC RECEPTOR GENE FAMILY
MEMBERS TARGETED BY ANTHelmintics
AND INSECT CONTROL AGENTS. D B Satelle,
E Cuttore, N Mongan, J C Freeman and K Matsuda.
The Babraham Institute Laboratory of Molecular
Signalling, Department of Zoology, Cambridge, UK.
Sponsor: T Narahashi.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#482 10:10 PHARMACOLOGICAL PROPERTIES OF CENTRAL NICOTINIC RECEPTORS. B R Martin and M I Damaj, Virginia Commonwealth University, Richmond, VA.

#483 10:40 CHRONIC NICOTINE INFUSION EFFECTS ON MEMORY: A VENTRAL HIPPOCAMPAL MECHANISM. F D Levin. Duke University Medical Center, Durham, NC. 11:10 GENERAL DISCUSSION.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
ERNEST H. MORIAL CONVENTION CENTER
ROOMS R02-R03

SYMPOSIUM SESSION: DRUG HYPERSENSITIVITY: MECHANISMS OF IMMUNE-MEDIATED REACTIONS

Sponsored By: The Immunotoxicology Specialty Section

Chairpersons: Elizabeth E. Sikorski, The Procter & Gamble Company, Cincinnati, OH and Helen G. Haggerty, Bristol-Myers Squibb Company, Syracuse, NY

Drug hypersensitivity (DH) is a common side effect of several classes of drugs. Though these reactions are considered to be immune mediated, there is a lack of basic mechanistic information regarding the immunology of DH reactions. Current information regarding the role of the immune system in DH will be presented. In many cases of DH, the antigen or hapten responsible for inducing an immune response is not known. In several cases, reactive drugs or drug metabolites have been shown to be the hapten. However, studies are presented demonstrating that chemically non-reactive drugs can be antigens in a manner independent of drug metabolism. Other studies suggest that the antigens are self proteins that have been altered by the drug resulting in the formation of neoantigens that are recognized by the immune system. These self peptides may either be altered by covalently bound hapten or simply be made available to the immune system (cryptic self peptides). In studies with mouse globin, both types of neoantigens appear to exist. Once the immune system recognizes these drug antigens as foreign, it is not clear how a particular response (Th1 versus Th2) is generated. The role of cytokines in the development and manifestation of Th1 and Th2 responses will be discussed. Interestingly, a hypothesis is presented stating that the normal immune response against hapten is the development of immunological tolerance. The pathway suggested for this to occur is by oral tolerance. Recent studies have shown that drugs and their metabolites adducts in the gut-associated lymphoid tissue, where tolerance against protein antigens is initiated. DH is an important issue as it can present major hurdles in the development of drugs; DH is generally observed in clinical trials and is not detected in preclinical testing. New revelations in the understanding of DH may lead to new approaches for predicting DH potential.

#485 8:40 METABOLIC BIOACTIVATION IN DRUG HYPERSENSITIVITY. I R Pohl. Molecular and Cellular Toxicology Section, NIH/NIH, Bethesda, MD.


#487 9:50 TH1/TH2 CYTOKINES AND REGULATION OF SPECIFIC IMMUNE RESPONSE TO DRUGS. H Lebrec1, I Gaspard1, S Kerdine1, N Bachot1, M-T Guinepau2, J Laurent2 and M Pallardy3.
1Immunotoxicology Group, INSERM U461, Faculté de Pharmacie Paris Sud, Châtenay-Malabry, France and 2Institut Pasteur, Paris, France.


11:00 GENERAL DISCUSSION.

TUESDAY MORNING, MARCH 16
8:45 AM - 11:30 AM
ERNEST H. MORIAL CONVENTION CENTER
ROOMS R06-R08

SYMPOSIUM SESSION: MECHANISMS OF ACTION OF NATURALLY-Occurring ANTICARCINOGENS

Sponsored By: The Molecular Biology Specialty Section

Chairperson: Stephen H. Safe, Texas A&M University, College Station, TX

The human diet contains a host of natural products that have been associated with both carcinogenic and anticarcinogenic activities. Cooking, proteolytic and other food results in formation of highly mutagenic aromatic amines that also exhibit carcinogenic effects in multiple animal models and target organs. The potential role of these compounds in the etiology of human cancers is being extensively investigated. Fruits, vegetables and high fiber diets are known to protect from development of several cancers, and some specific classes of chemicals in these foods have been strongly associated with their anticarcinogenic activities. In this symposium, the mechanisms of action of several different classes of naturally-occurring anticarcinogens and their derivatives will be discussed and these include isoflavonoids such as genistein, indole-3-carbinol and dimethylmethane, components of green tea and various vegetable-derived organosulfur compounds. These presentations will not only identify sources and mechanisms of action of natural anticarcinogens but also discuss some analogs that may have potential for clinical applications.

#489 8:45 MECHANISMS OF ACTION OF NATURALLY OcCurring ANTICARCINOGENS - INTRODUCTION. S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.
#490 8:55 ANTIESTROGENIC AND ANTI-TUMORIGENIC ACTIVITIES OF DIINDOLYL-METHANE. S Safa, A McDougal, I Chen, K Ramamorthy and M Sethi-Gupta. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#491 9:30 ORGANOSULFUR COMPOUNDS IN ALLIUMS:
MECHANISM OF CHEMOPREVENTIVE ACTION. M J Wargovich. Department of Pathology, University of South Carolina School of Medicine and South Carolina Cancer Center, Columbia, SC. Sponsor: S H Safe.

#492 10:05 GENISTEIN: IN VIVO MECHANISMS OF ACTION AND CHEMOPREVENTION. CA Lanari, L. Department of Pharmacology and Toxicology, University of Alabama at Birmingham, Birmingham, AL.

#493 10:40 GREEN TEA IN CHEMOPREVENTION OF CANCER: MECHANISM OF ACTION. H Mukhtar. Department of Dermatology, Case Western Reserve University, Cleveland, OH.

11:15 GENERAL DISCUSSION.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS 208-210

WORKSHOP SESSION: CARCINOGENICITY OF CIGARETTE SMOKE: BRIDGING THE GAP BETWEEN COMPLEX MIXTURES AND INDIVIDUAL COMPONENTS

Sponsored By: The Carcinogenesis and Mechanisms Specialty Sections

Chairpersons: Scott W. Burchiel, University of New Mexico, Albuquerque, NM and Hanspeter R. Witschi, University of California, Davis, CA

While it is generally accepted that cigarette smoking increases the risk of lung and other cancers in humans, there is not widespread agreement on what specific chemicals in the volatile and particulate fractions might be responsible for these effects. Since the components of cigarette smoke have continued to change over the years, especially with regard to those derived from tar, it is important to utilize state-of-the-art molecular and cellular techniques to analyze potential mechanisms of carcinogenicity of cigarette smoke. It is also important to understand how to extrapolate data obtained from isolated components to complex mixtures. The overall purpose of this workshop will be to bring together scientists with established track records performing cigarette smoke inhalation studies with those focusing on isolated components and mechanisms of carcinogenicity. Early cellular and molecular markers and dosimeters of tissue injury need to be established and validated. The effects of various mainstream and sidestream smoke components, as well as specific chemicals and oxidants present in smoke, on DNA and cell signaling pathways will be the focus of this workshop.

#494 8:30 CARCINOGENICITY OF CIGARETTE SMOKE:
BRIDGING THE GAP BETWEEN COMPLEX MIXTURES AND INDIVIDUAL COMPONENTS. W A Pryor. Biodynamics Institute, Louisiana State University, Baton Rouge, LA.

#495 8:40 FREE RADICALS AND OXIDANTS IN AQUEOUS EXTRACTS OF CIGARETTE SMOKE: DAMAGE TO LIPIDS, PROTEINS AND DNA. H P Witschi. Institute of Toxicology and Environmental Health, University of California, Davis, CA.

#496 9:10 CIGARETTE SMOKE AS A LUNG CARCINOGEN IN MAN AND ANIMALS. H P Witschi. Institute of Toxicology and Environmental Health, University of California, Davis, CA.

#497 9:40 CIGARETTE SMOKE CARCINOGENS:

#498 10:10 DO CIGARETTE SMOKE OXIDANTS ALTER SIGNALING PATHWAYS ASSOCIATED WITH TUMOR PROMOTION AND PROGRESSION? S W Burchiel. J C Seagrave and J L Born. The University of New Mexico College of Pharmacy, Toxicology Program and the Lovelace Respiratory Research Institute, Albuquerque, NM.


11:10 GENERAL DISCUSSION.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM R09

WORKSHOP SESSION: TELEMETRY, TOXICOLOGY AND SAFETY ASSESSMENT

Sponsored By: The Regulatory and Safety Assessment and Comparative and Veterinary Specialty Sections

Chairpersons: Lewis B. Kinter, Astra Pharmaceuticals, Wayne, PA and Dennis J. Murphy, SmithKline Beecham, King of Prussia, PA

Advances in radio-telemetry technology are providing new approaches for assessing the effects of toxicants in animals for purposes of risk assessment. Telemetry systems consist of miniaturized fully-implantable sensors and transmitters which detect and transmit physiological parameters (pressures, flows, temperatures, pH, electrical potentials, activity) to remote receivers. Currently, the technology can be applied in all commonly used laboratory species, from mice to monkeys. Using telemetry, physiological parameters may be continuously monitored in conscious unrestrained animals main-
tained in their natural or home environments. For toxicologists, telemetry permits parallel, sensitive, and dynamic assessments of critical organ system functions (blood pressure, respiratory parameters, ECG, etc.) using toxicological study designs, or simultaneous assessments with traditional toxicological endpoints in a single study. In addition to reducing the numbers of animals needed for risk assessment through combining physiological and toxicological endpoints, telemetry is a substitute for traditional anesthetized pharmacological preparations, and is consistent with the use of advanced statistical procedures (blocking and factorial analyses), supporting further reductions and refinements in animal use in safety assessment. Identification of effects of toxicants on critical organ system functions, including cardiac/cardiovascular, respiratory, and central nervous systems, provides useful markers for critical care physicians conducting subsequent studies in humans. Integration of effects of toxicants on physiological and toxicological endpoints contributes to elucidation of target organs and mechanisms of toxicity.

#500 8:30 TELEMETRY, TOXICOLOGY and SAFETY ASSESSMENT. L B Kinter1 and D J Murphy2. 1Astra Pharmaceuticals LP, Wayne, PA and 2SmithKline Beecham Pharmaceuticals, King of Prussia, PA.

#501 8:40 TELEMETRY: REAL REDUCTION AND REFINEMENT ALTERNATIVES IN RISK ASSESSMENT. L B Kinter1, D K Johnson2 and J Ventre2. 1Astra Pharmaceuticals LP and 2Nycomed Amersham, Wayne, PA.


#503 9:50 TELEMETRY AS A METHOD FOR MONITORING RESPIRATORY FUNCTION CHRONICALLY IN CONSCIOUS ANIMALS. D J Murphy, J P Renninger and K A Gossel. Department of Toxicology, SmithKline Beecham Pharmaceuticals, King of Prussia, PA.


11:00 GENERAL DISCUSSION.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
ERNST M. MORIAL CONVENTION CENTER
ROOM 207

PLATFORM SESSION: ANTIOXIDANTS AND OXIDATIVE INJURY

Chairpersons: Haral D. Mura, Virginia Tech, Blacksburg, VA and James Kang, University of Louisville, Louisville, KY


#507 9:00 OXIDATIVE STRESS AND PROTECTOR SYSTEM AGAINST REACTIVE OXYGEN SPECIES (ROS) IN BLOOD OF WORKERS EXPOSED TO ORGANIC SOLVENTS AND OTHER CHEMICALS. W Wasowicz, J Gromadzinska and K Rydzynski. The Nofer Institute of Occupational Medicine, Lodz, Poland. Sponsor: E Dybing.

#508 9:15 MARKERS OF ANTIOXIDANT STATUS IN BRONCHOALVEOLAR LAVAGE FLUID AND BLOOD OF RATS FED DIET WITH DIFFERENT AMOUNT OF SELENIUM AND EXPOSED TO NOX. J Gromadzinska1, K Rydzynski1, W Wasowicz1 and J Neve2. 1The Nofer Institute of Occupational Medicine, Lodz, Poland; 2Free University of Brussels, Brussels, Belgium. Sponsor: E Dybing.

#509 9:30 ENDOGENOUS N2-3-ETHENOGUANINE IS FORMED BY LIPID PEROXIDATION. A J L Ham1, A Ramasinthra2 and J A Swenberg1,2. Departments of 1Pathology and 2Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#510 9:45 SITE SELECTIVE OXIDATION AND REGULATION OF MICROSMAL RYANODINE-SENSITIVE CALCIUM RELEASE CHANNELS BY QUINONES. W Feng, G Liu and I N Pessah. Department of Molecular Biosciences, University of California, Davis, CA.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

Display: 8:30 AM - 11:30 AM
Discussed: 9:30 AM - 11:30 AM

#511 10:00  MITOCHONDRIA AND THE ENDOPLASMIC RETICULUM ARE SOURCES OF REACTIVE OXYGEN SPECIES IN 2-Br-Ado-(GLUTATHIONYL)-HYDROQUINONE TREATED LLC-PK1 CELLS. C Guo1, R Barhouni2, R C Burghardt2, S S Lau1 and T J Monks1. 1Div. of Pharm./Toxicol., College of Pharmacy, University of Texas at Austin, Austin, TX; 2Department of Veterinary Anatomy and Public Health and Image Analysis Lab, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#512 10:15  SEX DIFFERENCES IN DIQUAT-MEDIATED HEPATIC NECROSIS IN VIVO. S Gupta, R C Husser, R S Geske, S E Welty and C V Smith. Department of Pediatrics, Baylor College of Medicine, Houston, TX.


#514 10:45  GLUCOSE DEPRIVATION-INDUCED OXIDATIVE STRESS. D R Spitz1, R V Blackburn2, X Lu3, S S Galoforo3, J E Sim4, L A Ridnour4, J C Chen4, B H Davis5, P M Corry2 and Y J Lee2. 1Section of Cancer Biology, Washington University, St. Louis, MO and 2 Radiation Oncology Center, William Beaumont Hospital, Royal Oak, MI.

#515 11:00  A SYSTEM FOR THE DETECTION AND MEASUREMENT OF THE EFFECTS OF OXIDANTS (INCLUDING EXPOSURE TO METHYLENE BLUE PLUS LIGHT) AND ANTIOXIDANTS ON PRODUCTIVE INFECTIONS OF Hela CD4+ T Regal CELLS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV). J E Schneider, Jr1, Q Pye1, X-L. Lin2, P Marble2, J Tang2 and R A Floyd1. 1Free Radical Biology & Aging Research Program and 2Protein Studies Research Program, Oklahoma Medical Research Fnd, Oklahoma City, OK.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
EERNST N. MORIAL CONVENTION CENTER
ROOM ROI

POSTER DISCUSSION SESSION, P450 KNOCKOUT MICE

Chairpersons: Susan C. J. Sumner, CIIT, Research Triangle Park, NC and Curt J. Omieczinski, University of Washington, Seattle, WA

#516 THE ROLE OF CYTOCHROME P450 IN THE METABOLISM OF ACRYLAMIDE. S J Sumner1, T Fennell1, T Moore1, B Chana2, P Gonzalez3 and B Ghanyem2. 1CIIT and 2NIEHS, Research Triangle Park, NC; 3NCI, Bethesda, MD.

#517 THE ROLE OF CYTOCHROME P4502E1 (CYP2E1) IN ACRYLONITRILE METABOLISM. B I Ghanyem1, T R Fennell1, T Moore1, B Chana1, P J Gonzalez1 and S C J Sumner1. 1NIH/NIEHS and 2CIIT, Research Triangle Park, NC and 3NCI, Bethesda, MD.

#518 ASSESSING THE ROLE OF CYP2E1 IN THE METABOLISM AND GENOTOICITY OF 1,3-BUTADIENE. T E Jackson1,2, P M Schlosser1,3, M A Medinsky1, F J Gonzalez1 and L Recio2. 1Curriculum In Toxicology, University of North Carolina, Chapel Hill, Chapel Hill, NC; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 3Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#519 THE RATE OF CHLOROFORM METABOLISM CORRELATES WITH THE DEGREE OF TARGET TISSUE TOXICITY. B E Butterworth, C S Sprangle, A A Constan and G L Keeders. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#520 ROLE OF CYP1A2 IN UROPORPHYRIA CAUSED BY POLYHALOGENATED AROMATIC HYDROCARBONS USING CYP1A2 KNOCKOUT MICE. P R Sinclair1, N Gorman1, T P Dalton2, H S Walton3, J F Sinclair4, A G Smith5 and D W Neber5. 1VA Medical Center, White River Junction & Dartmouth Medical School, Hanover NH; 2Department of Environmental Health, University Cincinnati Medical Center, Cincinnati, OH; 3MRC Toxicology Unit, University of Leicester, Leicester, UK.

#521 INCREASED SUSCEPTIBILITY TO HYPEROXIC LUNG INJURY OF MICE LACKING THE CYPIA2 GENE. B Moorthy, R S Geske and S E Welty. Department of Pediatrics, Baylor College of Medicine, Houston, TX.
HEPATIC CYTOCHROME P450 EXPRESSION IN IL-6 GENE KNOCKOUT MICE FOLLOWING ENDOTOXIN ADMINISTRATION. G W Warren, M P Mattson, and R A Blouin. Graduate Center for Toxicology, Sanders Brown Research Center, Department of Anatomy and Neurobiology, College of Pharmacy, University of Kentucky, Lexington, KY. Sponsor: LW Robertson.

TUESDAY MORNING, MARCH 16
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 206
POSTER DISCUSSION SESSION, PERCHLORATE - TOXICOLOGY AND RISK ASSESSMENT
Displayed: 8:30 AM - 11:30 AM
Discussed: 9:30 AM - 11:30 AM

#523 A NEUROBEHAVIORAL DEVELOPMENTAL STUDY OF AMMONIUM PERCHLorate ADMINISTERED ORALLY IN DRINKING WATER TO RATS. R G York, R M Parker, D R Mattie, D E Dodd. Primedica Argus, Inc., Horsham, PA; Wright-Patterson AFB, Wright-Patterson AFB, OH; ManTech Environmental Technology, Inc., Dayton, OH.

#524 KINETICS OF RADIO Activityiodide IN THE MALE SPRAGUE DAWLEY RAT. K O Yu, D R Mattie and J W Fisher. AFRL/HE, Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH.

#525 TWO-GENERATION REPRODUCTION STUDY OF AMMONIUM PERCHLorate IN RATS. M F Girard, M L Dourson, R G York, J S Dollarhide and K A Poirier. 1Aerotech, Sacramento, CA; 2Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH; 3Primedica Argus Research Laboratories, Inc., Horsham, PA.

#526 DEVELOPMENTAL TOXICITY OF AMMONIUM PERCHLorate IN RABBITS. K A Poirier, M L Dourson, J S Dollarhide, M F Girard and R G York. 1TERA, Cincinnati, OH; 2Aerotech, Sacramento, CA; 3Primedica Argus Research Laboratories, Inc., Horsham, PA.


#528 FETAL ASSAY OF AMMONIUM PERCHLorate. J A Bantle, J N Dumont, G J Harvey and D R Mattie. Oklahoma State University, Stillwater, OK; Aeronautical System Center, Wright-Patterson AFB, OH.

#529 THYROID STATUS OF PERCHLorate WORKERS. S H Lamm, L E Braverman, F X Li, S Pino and G Howarth. Consultants in Epidemiology and Occupational Health, Inc., Washington, DC; Brigham & Women's Hospital, Boston, MA; American Pacific Corporation, Cedar City, UT.

#530 PERCHLorate IN DRINKING WATER AND RISK OF CONGENITAL HYPOTHYROIDISM. M L Doemland and S H Lamm. Consultants in Epidemiology and Occupational Health, Inc., Washington, DC.

#531 PERCHLorate ENVIRONMENTAL CONTAMINATION: TESTING STRATEGY BASED ON MODE OF ACTION. D R Mattie and A M Jarabek. AFRL, Wright-Patterson Air Force Base, OH; National Center for Environmental Assessment, US EPA, Research Triangle Park, NC.


#534 A 90-DAY DRINKING WATER TOXICITY STUDY IN RATS WITH AMMONIUM PERCHLorate. J C Siglin, D E Dodd, D R Mattie. 1Sprinbrooke Laboratories, Inc., Spencerville, OH; 2ManTech Environmental Technology, Dayton, OH; 3AFRL/HEST, Wright-Patterson AFB, OH.
#535 EFFECTS OF AMMONIUM PERCLORATE ON THYROID, HEMATOLOGICAL AND IMMUNOTOXICOLOGICAL PARAMETERS. M Jenny1, D Keil1, A Warren2, J Eudaly1, R Bullard-Dillard1. 1Medical University of SC, Charleston, SC; 2TERRA, Inc., Tallahassee, FL; 3Claffin University, Orangeburg, SC.

TUESDAY MORNING, MARCH 16
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: RESPIRATORY TRACT TOXICOLOGY: MODELS, METHODS AND SAFETY EVALUATION

Chairpersons: Gregory L. Finch, Lovelace Respiratory Research Institute, Albuquerque, NM and Vincent Castranova, NIOSH, Morgantown, WV

Displayed: 9:30 AM - 12:30 PM

#536 COMPARISON OF END-POINTS TO DETECT PULMONARY PHOSPHOLIPIDOSIS FOLLOWING INHALATION EXPOSURE OF RATS AND DOGS. J Pauluhn. BAYER AG, Institute of Toxicology, Wuppertal, Germany.

#537 A NEW RESPIRATORY MONITORING SYSTEM FOR CONSCIOUS PRIMATES DURING INHALATION EXPOSURES POSSIBLY DEMONSTRATING A CORRELATION BETWEEN RESPIRATORY RATES AND HISTOPATHOLOGICAL CHANGES IN THE LUNG. J A L Seywell and J C Norris. Inhalation Toxicology, Covance Laboratories, Harrogate, UK.

#538 SUBCHRONIC EXPOSURES OF RATS TO AN AEROSOL OF GENERIC COMMERCIAL ENGINE OIL. W E Dalbey and C A Schreiner. Mobil, Paulsboro, NJ.

#539 INHALATION TOXICITY STUDIES OF METHYLVINYL KETONE IN RATS AND MICE. D L Morgan1, H C Price2, R W O'Connor2, J F Mahler1, S M Ward1, R E Wilson1 and M E Cunningham1. 1NEIEHS, Research Triangle Park, NC; 2METI, Research Triangle Park, NC.

#540 TWO-WEEK (TEN-DAY) INHALATION TOXICITY AND TWO-WEEK RECOVERY STUDY OF PHENOL VAPOR IN THE RAT. G M Hoffman1, B J Dunn2, C R Morris (deceased)3, J H Butala4, S S Dimond5, R Ginigel6 and J M Waechter, Jr. 1Huntingdon Life Sciences, East Millstone, NJ; 2AlliedSignal, Morristown, NJ; 3ICC USA, Morrisville, NC; 4Consultant to Azteltech, Pittsburgh, PA; 5GE Plastics, Pittsfield, MA; 6Shell Chemical Company, Houston, TX; 7The Dow Chemical Company, Midland, MI.

#541 TISSUE AND SERUM MARKERS OF IP-8 EXPOSURE: TWO-DIMENSIONAL PROTEIN MAPPING. F A Witsmann1, C D Fultz1, R Young2, M L Witten1, L S Wright3, S E Kornguth3 and F L Siegel1. 1Molecular Anatomy Laboratory, Department of Biology, Indiana University Purdue University, Columbus, IN; 2University of Arizona Health Sciences Center, Tucson, AZ; 3The Waisman Center, University of Wisconsin, Madison, WI.

#542 AN INHALATION ONGOCENICITY AND CHRONIC TOXICITY STUDY OF PHOSPHINE IN RATS. P E Newton1, D A Banas2, N H Wilson2, W M Busey2 and D G Shaheen3. 1MPI Research, Mattawan, MI; 2Experimental Pathology Laboratories, Herndon, VA; 3DEGESCH America, Inc., Weyers Cave, VA.

#543 FOURTEEN-DAY INHALATION TOXICITY STUDY OF N-ETHYL-m-TOLUIDINE IN RATS. E Stephens1, N Rajendran2, D Sullivan2 and J Gerhart3. 1ChemFirst Inc, Pascagoula, MS; 2Life Sciences Research, IIT Research Institute, Chicago, IL.

#544 TOXICITY OF BREVETOXIN-2 IN RATS FOLLOWING ACUTE AND REPEATED ADMINISTRATION VIA THE RESPIRATORY TRACT. D Tischler1, J Benson1, F Hahn1 and D Baden2. 1Lovelace Respiratory Research Institute, Albuquerque, NM; 2Marine and Freshwater Biomedical Sciences Center, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL.

#545 DEVELOPMENT OF A RECLIRCULATING, NOSE-ONLY EXPOSURE SYSTEM TO STUDY UPTAKE OF [14C]-STYRENE. B A Wong1, J E Murphy1, P J Boogaard2 and S C J Summer1. 1Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 2Shell International Chemicals, Amsterdam, The Netherlands.
ASSESSMENT OF OCCUPATIONAL EXPOSURE OF WELDERS TO MANGANESE. J Zayed, S Savard and G Kennedy. [Research Group on Human Toxicology of the University of Montreal. 1Département de médecine du travail et d'hygiène du milieu, Faculté de médecine, Université de Montréal, 2Ecole Polytechnique, Montréal, Canada. Sponsor: R. Tardif.]

A SMALL ANIMAL PLETYSMOGRAPH/EXPOSURE TUBE FOR DETERMINATION OF RESPIRATORY MECHANICS DURING EXPOSURE, USING NON-INVASIVE METHODS TO MEASURE INTRAPELVEAL PRESSURE. E C Kimmel. Geo-Centers, Inc. at the Naval Health Research Center Detachment-Toxicology, WPAFB, OH. Sponsor: R L Carpenter.

A SIMPLE, INEXPENSIVE SOLID FUEL FURNACE FOR SMALL SCALE COMBUSTION TOXICITY STUDIES. J E Reboulet and E C Kimmel. Geo-Centers, Inc. at the Naval Health Research Center Detachment (Toxicology), WPAFB, OH. Sponsor: R L Carpenter.

THE GENERATION OF RESPIRABLE PARTICULATE AND FIBERS FROM THE PARTIAL PYROLYZATION OF ADVANCED COMPOSITE MATERIALS. D L Courson, E C Kimmel, J C Lipscomb and R L Carpenter. 1ManTech/Geo-Centers Joint Venture; 2Naval Health Research Center Detachment (Toxicology), Wright-Patterson AFB, OH; 3US Environmental Protection Agency, Cincinnati, OH.

A 13-WEEK INHALATION TOXICITY STUDY (WITH RECOVERY) OF AMMONIUM PERSULFATE IN ALBINO RATS. C E Ulrich, J Signorin, J G Henson and M T Butt. 1WIL Research Laboratories, Ashland, OH; 2FMC Corporation, Princeton, NJ; 3PAI, Fredrick, MD.


EFFECTS OF DIFFERENT CELLULOSE-CONTAINING RESPIRABLE SAMPLES IN THE LUNG OF FISCHER 344 RATS. G M Adamson, H Muhle, O Creutzzenberg, B Bellmann and C Dassenbrock. 1Procter & Gamble Company, Cincinnati, OH; 2Fraunhofer Institute of Toxicology & Aerosol Research, Hannover, Germany.


CYTOTOXICITY OF ABRASIVE BLASTING SUBSTITUTES. V Vallyathan, M Greskivitch, W Jones and V Castranova. 1Health Effects Laboratory Division and 2Division of Respiratory Disease Studies, National Institute for Occupational Safety and Health, Morgantown, WV.

GAMMA SCINTIGRAPHY OF RADIOLABELED VIRUS FOR IN VIVO DETERMINATION OF THE DOSE DELIVERED TO TARGET ORGANS IN GENE THERAPY: APPLICATION TO ADENOVIRUS-CPFP ADMINISTERED AS AEROSOL IN BABOONS. S. Lerondel, L Routledge, S. Bernard, P. Verdier, C. Sene, A. Pavirani, J. Descotes and A. Le Pape. 1CNRS-INSERM U316, Tours, France; 2Chrysalis International, L’Arbresle, France; 3INRA, Tours, France; 4Transgene, Strasbourg, France; 5INSERM U98X, Lyon, France.

AMIODARONE-INDUCED PULMONARY TOXICITY (APIT) IN F344 RATS. M D Taylor, K Van Dyke, A F Hubb2, L Bowman2, P R Miles and M J Reardon. 1Department of Pharmacology and Toxicology, West Virginia University; 2NIOSH/HELD, Morgantown, WV.

POTENTIAL HEALTH EFFECTS OF DBPs USING QUANTITATIVE STRUCTURE TOXICITY RELATIONSHIP. C J Mougdal, R M Bruce and J C Lipscomb. 1University of Cincinnati, Department of Environmental Health Sciences, Cincinnati, OH; 2US EPA, National Center for Environmental Assessment, Cincinnati, OH.

RATS AND HAMSTERS BOTH EXHIBIT A 9% LUNG DEPOSITION EFFICIENCY FOR INHALATION OF A DISTRIBUTION OF FIBERS GREATER THAN 5 MICRON IN LENGTH. O R. Mass and D B. Janssen. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

NINETY-DAY INHALATION TOXICITY OF TRANS-1,2-DICHLORETHYLENE IN RATS. D P Kelly, P W Ross, W J Brock, J A Barter and H Burleigh-Flayer. 1DuPont Company, Haskell Laboratory for Toxicology and Industrial Medicine, Newark DE; 2PP6 Industries, Newark, DE; 33M, Newark, DE.
A 28-DAY INTRANASAL STUDY IN RATS WITH AVICEL® RC-591. J Signorini1, E R Aguinaldo1 and M T But2, 1FMC Corporation, Princeton, NJ; 2Pathology Associates International, Frederick, MD.

TUESDAY MORNING, MARCH 16
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: GENOTOXICITY

Chairpersons: Gregory Erxson, NIEHS, Research Triangle Park, NC and Gopala Krishna, Parke-Davis Pharmaceutical Research, Ann Arbor, MI

Displayed: 9:30 AM - 12:30 PM

Attended: 11:00 AM - 12:30 PM

DNA-PROTEIN CROSSLINKS (DNAPC) AND DNA STRAND BREAKS (DNASB) IN HL-60 CELLS TREATED WITH THE TOXIC BENZENE METABOLITES TRANS, TRANS-MUCONALDEHYDE AND HYDROQUINONE. R P Amin and G Hitz, Joint Graduate Program In Toxicology, Rutgers University/UMDNJ-RWJ Medical School, Piscatway, NJ.


COMPARISON OF HISTOPATHOLOGY AND DNA ADDUCTS IN RATS SUBCHRONICALLY EXPOSED TO SMOKE FROM CIGARETTES THAT BURN OR PRIMARILY HEAT TOBACCO. P H Ayres, M A Higuchi, B G Brown, D J Doolittle and A T Masberg. R J Reynolds Tobacco Company, Winston-Salem, NC.


GENOTOXICITY ASSESSMENT OF SURAMIN – A POTENTIAL DRUG FOR PROSTATE CANCER. G Krishna, G Uda, J Garvin and D Pegg. Parke-Davis Pharm Res, Division of Warner-Lambert Co, Ann Arbor, MI.

ANALYSIS OF TAMOXIFEN-DNA ADDUCTS IN HUMANS AND RATS BY ACCELERATOR MASS SPECTROMETRY. E A Martin1, M Gaskell1, T L Carver2, K Tarttelin2, F Al-Azzawi1, I N H White1 and L L Smith1. 1 MRC Toxicology Unit, University of Leicester, Leicester, UK; 2 Lawrence Livermore National Laboratory, University of California, Livermore, CA.

REGULABLE REPAIR OF OXIDISED DNA IN STABLE CELL LINES USING TETRACYCLINE-REGULATED EXPRESSION OF FPG. R R Laposa1, J T Henderson2 and P G Wells3. Departments of 1Pharmaceutical Sciences and 2Pharmacology, University of Toronto and 3Mount Sinai Hospital Research Institute, Toronto, Canada.

FORMATION AND REPAIR KINETICS OF FURAN-MEDIATED DNA DOUBLE-STRAND BREAKS IN ISOLATED RAT HEPATOCYTES. S A Ploch, J Shearin and G L Kedders. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

THE GENOTOXICITY OF METHYLEUGENOL: A POSSIBLE MECHANISM OF ACTIVATION. I G Sipes1, J L Burkey1, J-M Sauer2 and C A McQueen1. 1Department of Pharmacology and Toxicology, The University of Arizona, Tucson, AZ; 2A Division of Eli Lilly & Company, Lilly Research Laboratories, Indianapolis, IN.

USE OF COMET ASSAY TO IDENTIFY DNA DAMAGE INDUCED BY IN VIVO ADMINISTRATION OF CYCLOPHOSPHAMIDE IN MICE. T-H. Kim, B M Francis and M J Plewa. University of Illinois, Urbana IL.

PHARMACODYNAMICS OF FORMALDEHYDE: ARREST OF DNA REPLICATION BY DNA PROTEIN CROSS LINKS IS THE PROXIMAL CAUSE OF MUTATIONS. H Heck and M Casanova. CIIT, Research Triangle Park, NC.

HUMAN CYTOCHROME P450 SPECIFICITY AND GENOTOXICITY INDUCED BY STYRENE. D Ribas3, L Recio2, E A Anderson4 and T E Jackson1,2. 1Curriculum In Toxicology, UNC Chapel Hill, Chapel Hill, NC; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 3Intest, Universitat Politècnica de Catalunya, Barcelona, Spain; 4Department of Microbiology, University of Madison, WI.

ERYTHROCYTES (RBC) AND GLUTATHIONE PEROXIDASE (GSH-Px): EFFECTS ON SPONTANEOUS AND DIEPOXYBUTANE (DEB)-INDUCED SISTER CHROMATID EXCHANGES (SCEs) IN TRANSGENIC BIG BLUE® MOUSE AND RAT PRIMARY FIBROBLASTS. G L Erexson1,2 and K R Tindal1. 1NIEHS, Research Triangle Park, NC and 2College of Veterinary Medicine, NCSU, Raleigh, NC.

GENETIC TOXICITY TESTING OF HFPO TRIMER AND HFPO TRIMER AMMONIUM SALT. W J Brock, K Wun-Kim, L R Cox, K M Gerber and K S Bentley. Haskell Laboratory for Toxicology and Industrial Medicine, DuPont Company, Newark, DE.

GENETIC VARIATION AND SUSCEPTIBILITY TO THE GENOTOXICITY OF 4-AMINO-BIPHENYL (4-ABP). L N Dang and C A McQueen. Department of Pharmacology and Toxicology, The University of Arizona, Tucson, Arizona.

STRUCTURE-ACTIVITY RELATIONSHIP STUDIES ON THE INDUCTION OF DNA-PROTEIN CROSSLINKS BY HEMATOXIC RING-OPENED BENZENE METABOLITES AND RELATED COMPOUNDS IN HL60 CELLS. H A Schoenfeld1 and G Witz2. 1Brown University, Providence, RI; 2UMDNJ-RWJ Medical School, Piscataway, NJ.

HUMAN SULFOTRANSFERASE FORMS POTENT MUTAGENS FROM METABOLITES OF 2,4-DIAMINOTOLUENE (2,4-DAT) AND 2,4-DINITROTOLUENE (2,4-DNT). H R Glatt1, U Pabel1, W Mein1, M W H Coughtrie2, G Sabbage3 and C N Fulany3. 1German Institute of Human Nutrition, Potsdam-Rehbruecke, Germany; 2University of Dundee, Dundee, Scotland; 3Walther Straub-Institut, Munich, Germany; 4University of Alabama at Birmingham, AL.

CIGARETTE PARAMETERS THAT INFLUENCE THE MUTAGENICITY OF MAINSTREAM SMOKE CONDENSATE. F J Tewes1, T J Meisingen1, W A Gomma1, E Roemer1 and R A Carchman2. 1INBIFO Institut für biologische Forschung, Cologne, Germany; 2Philip Morris USA, Richmond, VA.
THE CONFounding ROLE OF IMPURITIES IN THE GENOTOXIC EVALUATION OF A NEW PHARMACEUTICAL. V Gervais¹, S Horvath² and G Descomet¹. ¹Drug Safety Assessment and ²Analytical Chemistry Department, Groupe de Recherche Servier, Orleans, France.

DETECTION OF SPONTANEOUS AND INDUCED MUTATIONS IN TRANSGENIC FISH CARRYING A BACTERIOPHAGE LAMBDA CHI TARGET. R N Winn, M B Norris and K J Brayer, University of Georgia, Athens, GA. Sponsor: C Dublin.

MUTAGENIC AND CLASTOGENIC ACTIVITY WAS NOT FOUND WITH TRIBUTYLPHENYL CYCLIC PHOSPHITE OF BUTYLETHYL PROPRANE DIOL IN A STANDARD GENETIC TOXICOLOGY BATTERY. V O Wagner, III¹, R Gudiv¹, R H C San¹, D Jacobson-Kram¹, S S Dimonda² and R L Joiner². ¹MA BioServices, Inc., Rockville, MD and ²General Electric Company, Pittsfield, MA.

MOLECULAR ANALYSIS OF HPRT MUTANTS FROM 1,3-BUTADIENE EXPOSED WORKERS. H Ma¹, T G Wood² and J B Ward, Jr¹. ¹Department of Preventive Medicine and Community Health, ²Sealy Center for Molecular Sciences, University of Texas Medical Branch, Galveston, TX.

OLIGONUCLEOTIDE-INDUCED MUTATION IN CULTURED CELLS: CHARACTERIZATION, MECHANISM AND IMPLICATION. C Ghosh and P Liversen. AVI BioPharma Inc., Corvallis, OR.

MUTAGENIC POTENTIAL OF ADENINE N⁶ AND GUANINE N⁷ ADDUCTS OF BUTADIENE MONO- AND DIOXIDE. J R Carmichael¹ and R S Lloyd². Departments of ¹Preventive Medicine and Community Health and ²Human Biological Chemistry and Genetics, The University of Texas Medical Branch at Galveston, TX. Sponsor: J B Ward, Jr.

RECONSTRUCTED, DIFFERENTIATED AIRWAY EPITHELIAL CULTURES TO DETECT OCCUPATIONAL ASTHMA CAUSING AGENTS. J Sheagreen, M Klausner, J Kubilus and P Ogle. MatTek Corporation, Ashland, MA.

CLAIR CELL SECRETED PROTEIN (CCSP) OXIDATION IN THE FIRST WEEK OF LIFE IS INCREASED IN THE TRACHEAL FLUIDS OF INFANTS THAT DEVELOP BRONCHOPULMONARY DYSPLASIA. P L Ramsay, S E Hegemier, N Dzieic, L K Rogers, M E Wearden and S E Welty. Pediatrics, Baylor College of Medicine, Houston, TX. Sponsor: C V Smith.

STUDIES OF RESPIRATORY TRACT TOXICITY IN RATS EXPOSED TO MEXICO CITY URBAN AIR. E A Gross¹, R A James¹, P W Ross¹, K C Roberts¹, A M Howard¹, J R Harkeena², L Calderón-Garcidueñas³, K T Morgan⁴ and O R Mos⁵. ¹Chemical Industry Institute of Toxicology (CIIT), Research Triangle Park, NC; ²Michigan State University, East Lansing, MI; ³Instituto Nacional de Pediatria, Mexico City, Mexico; ⁴GlaxoWellcome Company, Research Triangle Park, NC.

MONOCROTALINE PYRROLE (MCTP) ALTERS THE TYPE I PNEUMOCYTE RESPONSE TO INTRANASAL ENDOTOXIN (LPS) ADMINISTRATION IN RATS. P B Lappin¹ and R A Roth². ¹Sierra Biomedical, Inc., Sparks, NV; ²Michigan State University, East Lansing, MI.

INTRANASAL INSTILLATION OF ZINC CADMIUM SULFIDE (ZNCS) IN FISCHER 344 RATS. J D Bergmann¹, L W Metker¹, W C McCain¹, P A Beall¹, M W Micheie¹ and R B Lee². ¹US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD; ²Robyn B. Lee & Associates, LLC, Fawn Grove, PA.

LUNG MORPHOLOGY AND COLLAGEN DEPOSITION IN AMIOLAR-L- AND VEHICLE-TREATED HAMSTERS FOLLOWING DIETARY VITAMIN E SUPPLEMENTATION. J W Carol¹, R G Leede², W J Raczi¹, J F Brien¹, T M Bray³ and T E Massep¹. Departments of ¹Pharmacology and Toxicology and ²Medicine, Queen's University, Kingston, ON, Canada; ³Leo Laboratories Canada Ltd., Ajax, ON, Canada; ⁴Department of Human Nutrition and Food Management, Ohio State University, Columbus, OH.

PULMONARY EFFECTS OF ENDOTOXIN CONTAMINATED METAL REMOVAL FLUID AEROSOLS. M P Delorme, X Gao and D J P Bassett. Wayne State University, Detroit, MI.
#601 EFFECTS OF VITAMIN E ON AMIODARONE-INDUCED CYTOTOXICITY IN ISOLATED HAMSTER LUNG CELLS. M W Bolt 1, W J Racz 1, J F Brien 1, T M Bray 2 and T E Massey 1,3, Departments of 1Pharmacology and Toxicology and 3Medicine, Queen’s University, Kingston, ON, Canada; 2Department of Human Nutrition and Food Management, Ohio State University, Columbus, OH.

#602 EFFECTS OF CYTOCHROME P450 (P450) INHIBITORS ON BIO-TRANSFORMATION OF THE TOBACCO SPECIFIC NITROSAMINE 4-(METHYLNITROSAMINO)-1-(3-PYRIDYL)-1-BUTANONE (NNK) IN FRESHLY ISOLATED HUMAN LUNG CELLS. G B J Smith 1, A Castonguay 4, K Reid 2, D Petsikas 4 and T E Massey 1,3, Departments of 1Pharmacology and Toxicology, 2Surgery and 3Medicine, Queen’s University, Kingston, ON, Canada; 4Laboratory of Cancer Etiology and Chemo-prevention, Faculty of Pharmacy, Laval University, Quebec City, PQ, Canada.

#603 CHANGES IN EPITHELIAL INTEGRITY, ALKALINE PHOSPHATASE ACTIVITY AND FIBRONECTIN EXPRESSION IN LUNGS OF RATS EXPOSED TO OZONE. P G Reinhart, S K Gupta and D K Bhatia. Department of Occupational and Environmental Health Sciences, Wayne State University, Detroit, MI.

#604 ACETAMINOPHEN CYTOTOXICITY IN RAT TYPE II PNEUMOCYTES AND ALVEOULAR MACROPHAGES IN VITRO. S Dimova 1, P Hoerl 2, M Demedts 2 and B Nemer 2, 1Institute of Physiology, Bulgarian Academy of Sciences, Sofia, Bulgaria; 2Laboratory of Pneumology, Unit of Toxicology, KU Leuven, Leuven, Belgium.

#605 QUANTIFICATION OF AGGLOMERATION IN THE RAT LUNG FOLLOWING INTRA-TRACHEAL INSTILLATION EXPOSURE TO SYNTHETIC MINERAL FIBERS. D M Bernstein 1, H Furtak 2, R Rogers 3 and P Thevenaz 1, 1Geneva, Switzerland; 2St. Gobain, Paris, France; 3RJC, Boston, MA; 4RCC, Füllinsdorf, Switzerland.

#606 ROLE FOR ICAM-1 AS A SIGNAL TRANSDUCTION MOLECULE IN SILICA EXPOSED MOUSE MACROPHAGES. A K Hubbard 1 and C Giardina 2, Departments of 1Pharmaceutical Sciences and 2Molecular and Cell Biology, University of Connecticut, Storrs, CT.

#607 THE ROLE OF CYP2B1 AND CYP2E1 ON m-XYLENE METABOLISM IN RAT PULMONARY AND HEPATIC MACROSOMES, IN VITRO. E E Reverdy and R A Schats. Northeastern University, Boston, MA.

#608 MONOTERPENES AS SENSORY IRRITANTS. J P Kasanen 1, A L Pasanen 1, P Pasanen 1, J Liesivuori 2 and Y Alarie 1, 1University of Kuopio, Kuopio, Finland; 2Kuopio Regional Institute of Occupational Health, Kuopio, Finland; 3University of Pittsburgh, PA.

#609 GENOTOXICITY AND IMMUNOLOGICAL CHANGES IN ISOCYANATE EXPOSED BROWN NORWAY RATS. P D Siegel, B -Z Zhong, T E Lawrence and D M Lewis. NIOSH, Morgantown, WV.

#610 RESPONSE OF SHEEP HEMOGLOBIN TO NOSE-ONLY, INHALED NITROGEN DIOXIDE AND CARBON MONOXIDE MIXTURE. N M Elfooy, M T Williams, K L Armstrong, C D McKinley and A J Januszkieicz. Department of Respiratory Research, Division of Medicine, Walter Reed Army Institute of Research, Washington, DC.

#611 TRICHTHACENE TOXINS ARE PRESENT IN NON-VIABLE STACHYBOTrys CHARTARUM SPORES. J J McGrath, N Markham, J D Cooley, W C Wong and D C Strauss. Department of Physiology and Department of Microbiology and Immunology, Texas Tech University Health Sciences Center, Lubbock, TX.

#612 BIOMARKERS OF CELL PROLIFERATION AND FIBROSIS IN MICE AFTER INHALATION OF ASBESTOS: APPLICATION TO TRANSGENIC MODELS USING LUNG EPITHELIAL CELL-SPECIFIC PROMOTERS FOR MODIFICATION OF MITOGEN-ACTIVATED PROTEIN KINASE SIGNALING CASCADES. R F Robledo, A B Cummins, E S Walsh, S A Bucier-Hoffmann, M W Jung, C R Timblin, P M Vacek, D J Taatjes and B T Mossman. Environmental Pathology Program, Department of Pathology, University of Vermont College of Medicine, Burlington, VT.

#613 MODULATION OF OZONE ABSORPTION BY INTERFACIAL PHOSPHOLIPIDS. L M Jacobson 1, J A Clements 2, J Goerke 2, A Biedani 4 and E M Postlethwait 1, 1Pulmonary Research Laboratories, University of Texas Medical Branch, Galveston; 2Cardiovascular Research Institute, University of California, San Francisco, CA.

#614 ADHESION MOLECULES ON BLOOD NEUTROPHILS AND ALVEOLAR MACROPHAGES FROM RATS: MODULATION BY EXPOSURE TO OZONE. E Hoffer 1, Y Baum 1, A Tabak 1 and C Frevert 2. 1Israel Poison Information Center, Rambam Medical Center, Haifa, Israel; 2Seattle VA Medical Center, Seattle, WA.
ACUTE INFLAMMATORY REACTION IN RATS AFTER INTRATRACHEAL INSTILLATION OF MATERIAL COLLECTED FROM A NYLON FLOCKING PLANT. V Castranova, D W Porter, A F Hubbs, V A Robinson, T Goldsmith, L Battelli , J Burkhardt, C Paciutelli and W Jones. NIOSH, Morgantown, WV.

INTRATRACHEAL INSTILLATION OF WELDING FUMES ALTERS THE PULMONARY CLEARANCE OF LISTERIA MONOCYTOGENES IN THE RAT. J M Antonini and T G Charron. HELD, National Institute for Occupational Safety and Health, Morgantown, WV.

APOPTOSIS INDUCTION AFTER SILICA INHALATION IN RATS. F Suarez1, D W Porter1, R Mercer1, L Millechia1, V Castranova1, D Ramsey2, A Khan2, J L McLaurn2 and A Tease2. HELD, NIOSH, Morgantown, WV; 2DBBS, NIOSH, Cincinnati, OH.

TEMPORAL RELATIONSHIPS BETWEEN BIOCHEMICAL MEDIATORS OF LUNG DAMAGE AND FIBROSIS AFTER SILICA INHALATION IN RATS. D W Porter1, V Castranova1, V A Robinson1, J Y C Ma1, M Berger1, A F Hubbs1, D Ramsey2, A Khan2 and J L McLaurn2. HELD, NIOSH, Morgantown, WV; 2DBBS, NIOSH, Cincinnati, OH.

PULMONARY RESPONSES TO SINGLE VERSUS MULTIPLE INTRATRACHEAL INSTILLATIONS OF SILICA IN RATS. M J Reasor1 and J M Antonini2. 1Department of Pharmacology & Toxicology, West Virginia University and 2NIOSH/HELD, Morgantown, WV.

HUMAN BRONCHOEPITHELIAL CELLS CAN DIRECTLY INDUCE LUNG FIBROBLAST GENE EXPRESSION OF EXTRACELLULAR MATRIX PROTEINS AND FIBROGENIC CYTOKINES FOLLOWING ASBESTOS EXPOSURE IN VITRO. D S Lang, H Schocker and S Hockertz. Fraunhofer Gesellschaft, Department of Toxicology and Environmental Medicine, Hamburg, Germany. Sponsor: H Marquard.

CELLULAR INJURY AND REPAIR: REVERSIBILITY OF PULMONARY FIBROTIC LESIONS IN RATS INHALING p-ARAMID RPF. K E Pinkerton1, A A Elliot1, M A Hartsky2, S R Frame2 and D B Warheit2. 1University California Davis, Davis, CA; 2DuPont Hazell Lab, Newark, DE.

THE INFLUENCE OF (1→3)-β-D GLUCAN ON ENDOTOXIN-INDUCED ACUTE PULMONARY INFLAMMATION. C J Roy, M E O'Neill and P S Thorne. Institute for Rural and Environmental Health, University of Iowa School of Public Health, Iowa City, IA.

PULMONARY INFLAMMATORY RESPONSES AFTER EXPOSURE TO OZONE ARE ENHANCED IN ENDOTOXEMIC RATS J G Wagner, J R Harkema and R J Roth. 1Department of Pharmacology and Toxicology and 2Department of Pathology, Michigan State University, East Lansing, MI.

ACUTE SMOKE-INDUCED LUNG INJURY IS RELATED TO TUMOR NECROSIS FACTOR-α mRNA GENE AND PROTEIN EXPRESSION IN ALVEOLAR MACROPHAGES. S Wang1, R C Lantz2, M W Vermeulen3 and M L Witten1. 1Department of Pediatrics, 2Departments of Cell Biology & Anatomy, Center for Toxicology, University of Arizona, Tucson, AZ; 3Pulmonary and Critical Care Unit, Massachusetts General Hospital and Harvard Medical School, Boston, MA.


STYRENE METABOLISM BY MOUSE AND RAT ISOLATED LUNG CELLS. D E Hynes, D B DeNicola and G F Carlson. 1School of Pharmacy, 2School of Veterinary Medicine and 3School of Health Sciences, Purdue University, West Lafayette, IN.

BIOKINETICS OF AN INHALED ULTRAFINE SILVER AEROSOL IN RATS. G L Finch, K J Nikula, E B Barr, J C Seagave, M B Spines and J L Mauderly. Lovelace Respiratory Research Institute, Albuquerque, NM.

PHYSICAL CHARACTERISTICS IMPORTANT FOR THE IgE ADJUVANT ACTIVITY OF PARTICLES. B Gramann1, P I Gaarder2, M Levik1. 1Department of Environmental Medicine, National Institute of Public Health, Oslo, Norway; 2Department of Immunology and Transfusion Medicine, Ullevål University Hospital, Oslo, Norway. Sponsor: E Dybing.

TUESDAY MORNING, MARCH 16
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: RECEPTOR BIOLOGY/SIGNAL TRANSDUCTION

Chairperson: Kenneth Ramos, Texas A&M University, College Station, TX

Displayed: 9:30 AM - 12:30 PM

Attended: 11:00 AM - 12:30 PM
FURTHER CHARACTERIZATION OF Egr-1,DNA BINDING PROTEINS AND THEIR FUNCTION IN VASCULAR SMOOTH MUSCLE CELLS. K P Miller, M T Holderman and K S Ramos. Department of Veterinary Physiology and Pharmacology & Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

ESTROGEN SIGNALING IN TROUT LIVER: ESTROGEN RECEPTOR AND NON-ESTROGEN RECEPTOR MEDIATED CELLULAR RESPONSE? S W Kullman1, Lera Erecius1, F Matsumura2, E Enna2 and D E Hinton1. 1School of Veterinary Medicine, Department of Anatomy, Physiology and Cell Biology and the 2Institute of Toxicology and Environmental Health, University of California, Davis, CA.

ANTIESTROGENIC EFFECTS OF 2,3,7,8- TETRACHLORODIBENZO-P-DIOXIN AND 3,4,4',5-TETRACHLOROBIPHENYL IN ZR-75-1 HUMAN BREAST CANCER CELLS. G Oenga1,2, B C Spink1 and D C Spink1,2. Wadsworth Center, New York State Department of Health, Albany, NY; 2School of Public Health, State University of New York at Albany, Albany, NY.

SENSITIVE MOLECULAR ASSESSMENT OF XENOESTROGEN ACTION IN THE UTERUS AND IN ENDOMETRIAL CELL LINES. G Vollmer1, E Strunck1, A-C Hopert1, W Wünsche1, P Driel1 and H Michna2. 1Med. Universität zu Lübeck, Lübeck, Germany; 2Fraunhofer IZT, Schmallenberg, Germany. 3Institut für Morphologie und Tumorforschung, DSHS, Köln, Germany. Sponsor: C-P Siegers.

STRESS PROTEINS IN MOUSE UTERUS INCREASE UPON TREATMENT WITH ESTRADIOL, METHYLTESTOSTERONE, MEDROXYPROGESTERONE AND FLUTAMIDE. T H Umbret1, B R Fisher1, A D Papachristou2 and K M Brown2. 1Health Sciences Branch, Center for Devices and Radiological Health, USFDA, Rockville, MD; 2Department of Biological Sciences, The George Washington University, Washington, DC.

THE ANTIESTROGEN ICI 182,780 REVERSES THE EFFECTS OF β-ESTRADIOL ON UTERINE MORPHOLOGY AND STRESS PROTEIN LEVELS. A D Papachristou1, K M Brown1, B R Fisher2 and T H Umbret1. 1Department of Biological Sciences, The George Washington University, Washington, DC; 2Health Sciences Branch, Center for Devices and Radiological Health, USFDA, Rockville, MD.

IDENTIFICATION OF ELEMENT IN THE bcl-2 GENE PROMOTER REQUIRED FOR ESTROGEN RESPONSIVENESS. L Dong, W Wang and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

A GC-RICH SITE IN THE THYMIDYLATE SYNTHASE GENE PROMOTER IS REQUIRED FOR ESTROGEN-RESPONSIVENESS IN MCF-7 HUMAN BREAST CANCER CELLS. W Xie, R Duan and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

ANTIESTROGENIC ACTIVITY OF DIINDOLYL METHANE ANALOGS IN HUMAN BREAST CANCER CELLS: STRUCTURE ACTIVITY RELATIONSHIPS. M S Gupta, K Yoon, K Ramamoorthy, A McDougal and S H Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

ESTROGEN RECEPTOR (ER) Sp1 PROTEIN INTERACTIONS WITH ER COACTIVATORS. T A Nguyen and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

MOLECULAR MECHANISM OF ESTROGEN-INDUCED IGFBP-4 GENE EXPRESSION. C Qin and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

HALODIINDOLYL METHANES: NATURAL PRODUCT DERIVATIVES WITH ANTIESTROGENIC AND ANTITUMORIGENIC ACTIVITIES. A J McDougal, M Gupta, K Ramamoorthy and S H Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

CROSSTALK BETWEEN THE AB RECEPTOR AND ESTROGEN RECEPTOR SIGNALING PATHWAYS IN REGULATION OF TRANSFORMING GROWTH FACTOR α. C Vyhidal and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) GENE EXPRESSION IS DOWNREGULATED BY 17β-ESTRADIOL (E2) IN HEC1-A HUMAN ENDOMETRIAL CARCINOMA CELL LINE. M Stoner and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.
#643 AβR-MEDIATED ANTIESTROGENICITY AND ANTITUMORGENICITY OF DIINDOLYL METHANE AND ANALOGS. K Ramamoorthy, A McDougal, M Gupta and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#644 ANTI-INFLAMMATORY EFFECTS OF TRITERPENOIDS ARE MEDIATED THROUGH PEROXISOME PROLIFERATOR ACTIVATED RECEPTORS (PPARs). W W Porter 1, N Suh 2, C Michnov 1, M B Sporn 2 and D J Mangelsdorf 1. 1Howard Hughes Medical Institute and the Departments of Pharmacology and 2Biochemistry, University of Texas Medical Center, Dallas, TX; 2Department of Pharmacology, Dartmouth Medical School, Dartmouth College, Hanover, NH.

#645 THE MITOGENIC ACTIVITY OF PEROXISOME PROLIFERATORS MAY INVOLVE ACTIVATION OF THE ERK PATHWAY THROUGH A PHOSPHATIDYLINOSITOL 3-KINASE-DEPENDENT MECHANISM. B J Moumbo and B D Thrall. Molecular Biosciences Department, Battelle, Pacific Northwest National Laboratory, Richland, WA.

#646 STEREOSELECTIVE ACTION OF NICOTINE ON NASAL NICOTINIC ACETYLCHOLINE RECEPTORS. M Kaegler 1, N Suwa 2, B Renner 2 and G Kobal 2. 1INIBIO - Institut fuer biologische Forschung, Koeln, Germany; 2Institut fuer Pharmakologie, University of Erlangen-Nuernberg, Germany. Sponsor: R A Carchman.

#647 UV LIGHT INDUCED MODULATION OF RPA PHOSPHORYLATION BY EXPRESSION OF ATM PROTEIN. G G Oakley 1, M Zernik-Kobak 1, M P Carty 1, K K Khanna 2, M F Lavin 2 and K Dixon 1. 1Department of Environmental Health, University of Cincinnati College of Medicine, Cincinnati, OH; 2Queensland Institute of Medical Research, The Bancroft Centre, PO Royal Brisbane Hospital, Herston, Brisbane, Australia.

TUESDAY MORNING, MARCH 16
9:30 AM - 12:30 PM
ERNST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING

Chairpersons: John Lipscomb, US EPA, Cincinnati, OH and Michael L. Gargas, McLaren/Hurt, Cleveland, OH

Displayed: 9:30 AM - 12:30 PM

#648 DOSE ESTIMATING EXPOSURE MODEL (DEEM) ARCHITECTURE TO ESTIMATE RELEVANT TOXICOLOGICAL DOSE. J N Blan <...>


#650 QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIP (QSAR) FOR PREDICTING THE POTENTIAL DERMAL DOSE AND DISPOSITION OF ORGANOPHOSPHORUS INSECTICIDES. C C Dary 1, E J Furtaw 1, J N Blan <...>

#651 A PRIORI DETERMINATION OF THE LUMPING OF TISSUE COMPARTMENTS M Pelekis 1, J M Frazier 2 and J N McDougal 1. 1Geo-Centers Inc., 2Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH.

#652 PREDICTION OF THE PHARMACOKINETICS OF DRUGS WHICH ARE HIGHLY METABOLIZED IN LIVER. F-P Theil and P Poulin. Hoffmann-La Roche, Ltd., Basel, Switzerland.

#653 ESTIMATION OF TISSUE: BLOOD PARTITION COEFFICIENTS OF DRUGS BY TAKING INTO ACCOUNT THEIR SOLUBILITY AND PROTEIN BINDING. P Poulin and F-P Theil. Hoffmann-La Roche, Ltd., Basel, Switzerland.

#654 CRITICAL DETERMINANTS AND IMPACT ON PHARMACOKINETICS (PK) OF BLOOD PROTEIN BINDING OF VOLATILE ORGANIC CHEMICALS (VOCs). M Beliveau, G Charest-Tardif and K Krishnan. TOXUM, Universite de Montreal, Montréal, Québec, Canada.
A QUANTITATIVE STRUCTURE-TOXICOKINETIC RELATIONSHIP (QSTK) MODEL FOR ALIPHATIC HYDROCARBONS. M-O Fouchécourt and K Krishnan. TOXHUM, Université de Montréal, Montréal, Québec, Canada.

AN INTEGRATED PHYSIOLOGICAL PHARMACOKINETIC MODEL FOR HIGHLY LIPOPHILIC ORGANOHALOGEN SUBSTANCES. C Emond and K Krishnan. TOXHUM, Université de Montréal, Montréal, Québec, Canada.

PHYSIOLOGICAL MODELING TO CHARACTERIZE ADULT-CHILDREN DIFFERENCES IN PHARMACOKINETICS (PK). S Haddad, C Restieri and K Krishnan. TOXHUM, Université de Montréal, Montréal, Québec, Canada.

EXPERIMENTAL EVALUATION AND PHYSIOLOGICAL MODELING OF THE PHARMACOKINETICS OF 3,5-XYLIDINE IN RATS. C Blanchette, S Shardonofsky and K Krishnan. TOXHUM, Université de Montréal, Montréal, Québec, Canada.

PHYSIOLOGICALLY-BASED MODELING OF THE PHARMACOKINETICS OF C8 – C10 1-ALKENES AND ISO-ALKENES IN THE RAT. G Charest-Tardif, P St Jean, R Tardif and K Krishnan. Groupe de recherche en toxicologie humaine (TOXHUM), Université de Montréal, Montréal, Québec, Canada.

COMPARISON OF SOFTWARE ENVIRONMENTS FOR PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL SIMULATION. R L Carpenter. Naval Health Research Center (Toxicology), Wright-Patterson AFB, OH.

USING PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING TO MINIMIZE ANIMAL TESTING AND ASSOCIATED COSTS UNDER US EPA's HAZARDOUS AIR POLLUTANTS TEST RULE. M L Gargas1, C R Kirman1, S M Hays1 and P Vojtek2. 1McLaren-Hart/ChemRisk, Cleveland, OH; 2Regulatory Sciences International, Alexandria, VA.

EFFECT OF BROMODICHLOOROMETHANE (BDCM) ON VENTILATION IN THE MALE F-344 RAT DURING GAS UPTAKE INHALATION EXPOSURE. D Terrell1, J L Mansfield2, R A Pegram3 and M V Evans4. 1US EPA/NHEERL, Research Triangle Park, NC; 2SEE, Research Triangle Park, NC.

IN VITRO TO IN VIVO EXTRAPOLATION FOR TRICHLOROETHYLENE METABOLISM IN HUMANS. J C Lipscomb,1 J W Fisher1, P D Confer2 and J Z Byczkowski2. 1U.S. Air Force Research Laboratory; 2ManTech-GEOS Centers Joint Venture, Wright-Patterson AFB, OH.

APPLICATION OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODEL FOR ETHANOL TO QUANTIFY THE BIOAVAILABILITY IN MALE RATS. G M Pastino1 and R B Conolly2. 1Ciba Specialty Chemicals, Tarrytown, NY; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC.


COMPARATIVE TOXICOKINETICS OF CARBON TETRACHLORIDE IN RATS, MICE AND HAMSTERS. K D Truskolaski1, M E Vucevic1 and J M Benson2. 1Pacific Northwest National Lab, Richland, WA; and 2Lovelace Respiratory Research Institute, Albuquerque, NM.

PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING OF HUMAN DERMAL ABSORPTION OF CHLOROFORM FROM BATHWATER. R A Corley1, S M Gordon2 and L A Wallace3. 1Battelle, Pacific Northwest Laboratories, Richland, WA; 2Battelle Memorial Institute, Columbus, OH; 3US EPA, Reston, VA.

PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELING OF ETHYLENE GLYCOL ETHERS AND ACETATES IN PREGNANT RATS. S M Hays1, T R Tyler2, W M Snellings3, K K Weitz4, R A Corley3, C R Kirman5 and M L Gargas5. 1ChemRisk, Cleveland, OH; 2Eaton Carbide Corporation, Danbury, CT; 3Pacific Northwest Laboratories, Richland, WA.

AN APPLICATION OF SENSITIVITY ANALYSIS WHEN USING A PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODEL FOR CHLOROFORM IN RATS. C R Eklund and M V Evans. US EPA/NHEERL, Research Triangle Park, NC.

DEVELOPING A PHYSIOLGICALLY BASED PHARMACOKINETIC MODEL TO DESCRIBE METHYLENETHOCHLORIDE KINETICS AT THE SUBCELLULAR LEVEL. W Rish, C R Kirman, S M Hays, M L Gargas, M E Andersen, R H Reitz, P P Guengerich, T Green, E E McConnell, A Buckpitt, P Voytek, P H Dugard, M McLaren-Hart. ChemRisk, Cleveland, OH; ICF Kaiser, Research Triangle Park, NC; RHR Toxicology Consulting, Midland, MI; Vanderbilt University, Nashville, TN; Zeneca, Cheshire, England; Tox Path, Inc., Raleigh, NC; University of California, Davis, CA; Regulatory Sciences International, Alexandria, VA; Halogenated Solvents Industry Alliance, Washington, DC.

PHARMACOKINETIC MODELING OF OCTAMETHYL cyclo- TETRA SILOXANE (D4) IN RATS: SINGLE AND REPEAT INHALATION EXPOSURE. M E Andersen, R Sarangapani, R H Reitz, R H Gallavan and K P Plotzek. ICF Kaiser, Research Triangle Park, NC; RHR Toxicology Consulting and Dow Corning Corporation, Midland, MI.

DEVELOPMENT OF A PHYSIOLGICALLY BASED PHARMACOKINETIC (PB-PK) MODEL FOR ISOPROPANOL AND ACETONE. R Gentry, H Clewell, J Gearhart, T Covington, M Andersen. The K.S. Crump Group, Inc., ICF Kaiser, Ruston, LA; Procter and Gamble, Cincinnati, OH.


PHYSIOLOGICALLY BASED MODELING OF HUMAN EXPOSURE TO DICHLOROMETHANE VAPOR USING MARKOV CHAIN MONTE CARLO SIMULATIONS. F Jonsson and F Bois. National Institute for Working Life, Solna, Sweden; Department of Occupational and Environmental Medicine, Uppsala University Hospital, Sweden; Lawrence Berkeley Laboratory, Berkeley, CA.

DEVELOPING A PHYSIOLGICALLY BASED PHARMACOKINETIC MODEL FOR METHYLENETHOCHLORIDE IN RATS AND MICE AFTER SINGLE INTRAVENOUS AND ORAL DOSES. G M Blumenthal and F M Parham. Laboratory of Computational Biology and Risk Analysis, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: R S Chhabra.


A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR PENTACHLOROBENZENE: APPLICATION TO A MEDIUM-TERM LIVER FOCI BIOASSAY. R S Thomas, D L Gustafson, E Long, S J Borghoff and R S H Yang. Center for Environmental Toxicology & Technology, Department of Environmental Health, Colorado State University, Fort Collins, CO; Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
PRENATAL EXPOSURE TO ANTIANDROGENS ALTERS THE RESPONSIVENESS OF PROSTATE TO p,p'-DDE IN MALE ADULT RATS AND INDUCES PROSTATIC INFLAMMATORY RESPONSES. L You, K A Bremecman and H d'A Heck. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

AH RECEPTOR AND ARNT PROTEIN CONCENTRATIONS IN RAT PROSTATE: EFFECTS OF AGE AND 2,3,7,8-TCDD. K M Sojka1, R J Sommer2, P S Cooke4, R E Peterson3, and R S Pollenz1. 1Department of Biochemistry and Molecular Biology, Medical University of South Carolina, Charleston, SC; 2School of Pharmacy and 3Environmental Toxicology Center, University of Wisconsin, Madison, WI; 4Department of Veterinary Biosciences, University of Illinois, Urbana, IL.

PROFILES OF EFFECTS OF ANTIANDROGENIC PESTICIDES AND TOXIC SUBSTANCES ON SEX DIFFERENTIATION. I E Gray Jr. and J Osby. US EPA, NHEERL, Research Triangle Park, NC.

DOSE-RESPONSE FOR ALTERED MALE REPRODUCTIVE DEVELOPMENT AND FUNCTION INDUCED BY Di(n-BUTYL) PHTHALATE. E Mylchreest, D G Wallace, R C Cattley and P M D Foster. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

DEVELOPMENTAL AND REPRODUCTIVE EFFECTS OF LOW-DOSE, STEADY-STATE MATERNAL 2,3,7,8 TETRACHLORODIBENZO-P-DIOXIN (TCDD) ADMINISTRATION. J Osby, M Price, O Hues, C Hurst, L Birnbaum and L E Gray Jr. US EPA, NHEERL, Research Triangle Park, NC.


CHANGES IN THE REPRODUCTIVE ORGANS OF THE MALE RATS EXPOSED MATERNALLY TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD). S Ohsaka1, N Nishimura1, Y Miyabara2, M Ishizuka2, Y Aoki1, C Tsykama1, H Sone2 and J Yomemoto2. 1Environmental Health Sciences Division and 2Regional Environment Division, NIES, Tsukuba, Ibaraki, Japan.
INHIBITION OF EMBRYONIC CATALASE BY ARSENICALS AS A POTENTIAL MECHANISM OF DYSMORPHOGENESIS. E S Hunter1,2, F Copeeland1 and L Gefride2. 1Reproductive Toxicology Division, NHIERL, US EPA, Research Triangle Park, NC and 2UNC–CH, Curriculum in Toxicology, Chapel Hill, NC. Sponsor: J Rogers.


ACQUISITION OF A MULTIPLE DRH EXTINCTION SCHEDULE OF REINFORCEMENT IN RATS EXPOSED DURING DEVELOPMENT TO METHYLMERCUry. E B Rasmussen and M C Newland. Auburn University, Auburn, AL.

IN VIVO DETERMINATION OF CELL CYCLING RATES IN EMBRYONIC RAT NEURAL CELLS: DEVELOPMENT OF A BIOLOGICALLY-BASED TOXICO-DYNAMIC MODEL FOR METHYL MERCURY RISK ASSESSMENT. T A Lewandowski, J L Schroeder, R A Ponce, S M Bartell and E M Faustman. Institute for Risk Analysis and Risk Communication, Department of Environmental Health, University of Washington, Seattle, WA.

DEVELOPMENTAL METHYL MERCURY ADMINISTRATION DECREASES SYNAPTOSOMAL SIALYLTRANSFERASE ACTIVITY AND ALTERS SYNAPTIC EXPRESSION OF SIALOGLYCOCONJUGATES. P M Dey, M A Polonos and K R Rosh. Neurotoxicology Laboratories, Rutgers College of Pharmacy and the Joint Graduate Program in Toxicology, Rutgers University/UMDNJ, Piscataway, NJ.

ACTIVATION OF HUMAN PLACENTAL PHOSPHOLIPASE A2 BY NICOTINE AND COTTON; A RISK FACTOR FOR SMOKING WOMEN DURING PREGNANCY. B V R Sastry, M E Hemonitor and M Olencic. Department of Anesthesiology, Vanderbilt Medical Center, Nashville, TN.

ACTIVITY OF CHOLINESTERASE ENZYMES FOLLOWING A SINGLE DERMAL DOSE OF CHLORPYRIFOS ALONE, OR IN COMBINATION WITH METHYL PARATHION IN SPRAGUE–DAWLEY RATS. M B Abou–Donia and A W Abu–Qare. Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

INHIBITION AND RECOVERY OF MATERNAL AND FETAL CHOLINESTERASE ENZYMES FOLLOWING A SINGLE DERMAL DOSE OF DIAZINON ALONE, OR IN COMBINATION WITH METHYL PARATHION IN SPRAGUE–DAWLEY RATS. A W Abu–Qare, C F Brownie and M B Abou–Donia. Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

AN EVALUATION OF THE EFFECTS OF MGI 114 ON ORGANOGENESIS IN RATS AND RABBITS. R F Marshall1, D G Stump2, J L Schardel2 and J R MacDonald1. 1MGI PHARMA, Inc., Minnetonka, MN; 2WIL Research Laboratories, Inc., Ashland, OH.

EFFECTS OF DIETHYLENE GLYCOL MONOMETHYL ETHER AND ETHYLENE GLYCOL MONOMETHYL ETHER ON IN VITRO CHONDROGENESIS. E S Hanson and M A Smith. Department of Environmental Health Science, University of Georgia, Athens, GA.

CHARACTERIZATION OF OCHRATOXIN A (OTA) UPTAKE AND DEVELOPMENTAL TOXICITY USING THE FETAX SYSTEM. B O'Brien, A Prietz and D R Dietrich. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

RETINOIC ACID-INDUCED HINDLIMB MALFORMATIONS IN WOOD FROGS (RANA SYLVATICA). S J Degitz, P A Kosian, E A Makynen and G T Ankley. US EPA, MEDICAL, Duluth, MN.

LIFE-STAGE SPECIFIC EFFECTS OF ALL-TRANS RETINOIC ACID ON GREEN FROG (RANA CLAMITANS) EMBRYOS AND TADPOLES. P A Kosian, E A Makynen, G T Ankley and S J Degitz. US EPA, MEDICAL, Duluth, MN.

DYSMORPHOGENESIS AND LETHALITY IN MINK FROGS (RANA SEPTENTRIONALIS) EXPOSED TO ALL-TRANS RETINOIC ACID AT DIFFERENT LIFE STAGES. E A Makynen, P A Kosian, G T Ankley and S J Degitz. US EPA, MEDICAL, Duluth, MN.
TUESDAY MORNING, MARCH 16
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: APOPTOSIS II

Chairpersons: James P. Kehrer, University of Texas, Austin, TX and Mitti Nagarkatti, Virginia Tech, Blacksburg, VA

Displayed: 9:30 AM - 12:30 PM

Attended: 9:30 AM - 11:00 AM

#712
APOPTOSIS AS A POTENTIAL MECHANISM OF IMMUNE SUPPRESSION CAUSED BY EXPOSURE TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD). E A Dearstyne and N J Kerkeviet. Department of Environmental and Molecular Toxicology and the Environmental Health Sciences Center, Oregon State University, Corvallis, OR.

#713
MECHANISTIC DIFFERENCES IN APOPTOSIS OF PULMONARY NEUTROPHILS FOLLOWING IN VIVO EXPOSURES TO CRYSTALLINE SILICA OR TITANIUM DIOXIDE PARTICLES. D D Zhou, M A Hartsky, and D B Warheit. DuPont Haskell Lab., Newark, DE.

#714
CHARACTERIZATION OF CL-1994 INDUCED APOPTOSIS IN HUMAN LEUKEMIA (HL60) CELLS. T A Padalino, E A Cockrell, A J Gonzales and M J Graziano. Department of Pathology and Experimental Toxicology, Parke-Davis Pharmaceutical Research, Ann Arbor, MI.

#715
2,3,5-TRIS-(GLUTATHION-S-YL) HYDROQUINONE DEPLETES CELLULAR GLUTATHIONE, STIMULATES SPHINGOMYELIN TURNOVER and INDUCES APOPTOSIS IN HL-60 CELLS: ROLE OF REACTIVE OXYGEN SPECIES AND NUCLEAR FACTOR-kB. S B Bratton, S S Lao and T J Monks. Division of Pharmacology and Toxicol., College of Pharmacy, University of Texas @ Austin, TX.

#716
CATECHOL AND HYDROQUINONE METABOLITES OF BENZENE AND REMOXIPRIDE, TWO COMPOUNDS ASSOCIATED WITH APLASTIC ANEMIA, INDUCE APOPTOSIS IN HUMAN BONE MARROW PROGENITOR CELLS. S M McGuinness, R Johansson, J Lundstrom and D Ross. 1 School of Pharmacy, University of Colorado Health Sciences Center, Denver, CO; 2 Astra AB, Sodertalje, Sweden.

#717
THE ROLE OF DMBA METABOLITES IN PREB CELL APOPTOSIS. K K Mann, M E Hahn, A F Trombino, B P Lawrence, N J Kerkvliet and D H SHERL. 1 Boston Medical Center, Boston, MA; 2 Woods Hole Oceanographic Institute, Woods Hole, MA; 3 Washington State University, Pullman, WA; 4 Oregon State University, Corvallis, OR.

#718
VISUALIZATION OF INTRACELLULAR SIGNALS BEFORE AND DURING DEXAMETHASONE-INDUCED APOPTOSIS OF NB2 RAT LYMPHOMA CELLS. A P Guarniz and R J Witonski. Virginia Commonwealth University, Richmond, VA.

#719
GROUP II CASPASES (CASPA-3,-7,-2) ARE NOT INVOLVED IN APOPTOSIS INDUCED BY GLUCOCORTICOIDS AND CYTOKINE DEPRIVATION ON LYMPHOMA CELLS. G Hache, A Biola and M Dalliard. Immunotoxicology Group, INERIM U461, Faculté de Pharmacie Paris-Sud, Châtenay-Malabry, France.

#720
OXIDATIVE STRESS AND THE FAS PATHWAY IN APOPTOSIS OF CULTURED HUMAN RETINAL PIGMENT EPITHELIAL CELLS. S Jiang, J Cui, M Wu, P Stemberg, Jr. and D P Jones. 1 Department of Biochemistry and 2 Department of Ophthalmology, Emory University School of Medicine, Atlanta, GA.

#721
MERCURY SUPPRESSES CD95/FAS-MEDIATED APOPTOSIS: A SEARCH FOR THE MECHANISM. M J Whelan, J Heimler and M J McCabe, Jr. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.
ROLE OF TCDD-INDUCED APOPTOSIS AS A MECHANISM OF IMMUNOTOXICITY IN PERIPHERAL T CELLS ACTIVATED THROUGH THE T CELL RECEPTOR. I Camacho1, M Nagarkatti1 and P S Nagarkatti2.

1Department of Biomedical Sciences and Pathobiology, VA-MD Regional College of Veterinary Medicine, Blacksburg, VA; 2Department of Biology, Virginia Tech, Blacksburg, VA.

ROLE OF CASPASES AND FAS LIGAND IN THE INDUCTION OF APOPTOSIS IN THYMOCYTES BY TCDD. M Nagarkatti1, A B Kamath1, I Camacho1 and P S Nagarkatti2.

1Department of Biomedical Sciences and Pathobiology, VA-MD Regional College of Veterinary Medicine, Blacksburg, VA; 2Department of Biology, Virginia Tech, Blacksburg, VA.


Department of Biomedical Sciences and Pathobiology, VMRVM, Blacksburg, VA. Sponsor: S D Holladay.

MK886, A 5-LIPOXYGENASE ACTIVATING PROTEIN (FLAP) INHIBITOR, INDUCES FLAP-INDEPENDENT APOPTOSIS IN FLS.12 CELLS. K Datta and J P Kehrer. Div. of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

POLY(ADP-RIBOSE) POLYMERASE INHIBITION PREVENTS OXIDANT-INDUCED ONCOSIS AND PERMITS APOPTOSIS IN ENDOTHELIAL CELLS. J A Walisser and R L Thies. Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada.

N-ACETYL CYSTEINE (NAC) PARTIALLY BLOCKS FLUDARABINE-INDUCED APOPTOSIS IN CLL CELL LINES BY ACTING DOWNSTREAM OF CASPASE-3 ACTIVATION. S Biswal, K Datta and J P Kehrer. Div. of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

DICHLOROACETONITRILE INDUCES OXIDATIVE STRESS AS A MEDIATOR OF APOPTOSIS OR NECROSIS IN MOUSE PERITONEAL MACROPHAGES (MPM). A E Ahmed and S Jacob. Department of Pathology, University of Texas Medical Branch, Galveston, TX.

ALLOPURINOL INHIBITS POLY (ADP-RIBOSE) POLYMERASE AND CONVERTS OXIDANT-INDUCED ENDOTHELIOL CELL DEATH FROM ONCOSIS TO APOPTOSIS. H C Wilson, J A Walisser and R L Thies. Division of Pharmacology and Toxicology, Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada.

HYDROGEN PEROXIDE INDUCES TWO TYPES OF PROGRAMMED CELL DEATH IN NORMAL HUMAN DIPLOID FIBROBLASTS. J B Merrill1, C H Pham2, J Liu1 and Q M Chen1.

1University of Arizona, Tucson, AZ; 2University of California, Berkeley, CA.

ANTIOXIDANT GRAPE SEED PROANTHOCYANIDIN EXTRACT (GSE) AND A DNA REPAIR MODULATOR 3-AMINOBENZAMIDE (3-AB) PROTECT DOORUBICIN (DOXO)-INDUCED CARDIOTOXICITY IN VIVO. V Wong1, K Fu1, B Kohanchi1, D Bagchi2 and S D Ray3.

1College of Pharm., Long Island University, Brooklyn, NY; 2Creighton University School of Pharm. and Alld. Hlth. Prof., Omaha, NE.

MECHANISM OF MENADIONE TOXICITY IN A LYMPHBLAST LINE. P B Calderon1,2 and J L Holtzman2,3.

1Catholic University of Louvain, Brussels Belgium; 2VA Medical Center and 3University of Minnesota, Minneapolis, MN.

INHIBITION OF DOXORUBICIN-INDUCED APOPTOSIS IN METALLOTHIONEIN OVEREX Pressing TRANSGENIC MOUSE HEART. Y J Kang and G-W Wang. Departments of Medicine and Pharmacology and Toxicology, University of Louisville, Louisville, KY.

THE ‘APOSOME’ A LARGE (~700 KDa) CASPASE ACTIVATING COMPLEX. K Cain, D G Brown, X-M Sun and G M Cohen. MRC Toxicology Unit, University of Leicester, Leicester, UK. Sponsor: A G Smith.

PROTEASOME INHIBITION INDUCES HSP70 AND PROMOTES APOPTOSIS WHICH IS DECREASED BY BCL-XL OVEREXPRESSION IN MURINE PRO-B LYMPHOCYTIC (FLS.12) CELLS. J D Robertson, K Datta and J P Kehrer. Div. of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

DEATH OR SURVIVAL IN NORMAL HUMAN FIBROBLASTS IS DETERMINED BY BAX OR P21 GENE EXPRESSION. Q M Chen. Department of Pharmacology, University of Arizona, Tucson, AZ.
#737 PRECURSORS DECREASE CONSTITUTIVE LEVELS OF ACTIVATED NFkB AND GRP78 AND PROTECT CELLS AGAINST APOPTOSIS. C L Crowley, C M Payne, H Bernstein, C Bernstein and D J Roe. 1Department of Microbiology and Immunology, College of Medicine, University of Arizona, Tucson, AZ; 2Arizona Cancer Center, Division of Biometry, Tucson, AZ. Sponsor: C Lantz.

#738 p53 SUPPRESSES APOPTOSIS IN ALVEOLAR MACROPHAGES EXPOSED TO BLEOMYCIN IN VIVO. D W Davis, D A Weidner, T B Felder, A Holian and D J McConkey. Program in Toxicology, University of Texas-Houston Graduate School of Biomedical Sciences and 2Department of Cell Biology and 3Department of Molecular Hematology and Therapy, University of Texas-MD Anderson Cancer Center and 4Department of Pulmonary and Critical Care Medicine, University of Texas Medical School, Houston, TX.

#739 MECHANISTIC STUDIES OF PUVA INDUCED APOPTOSIS. A B Santamaria and H N Ananthaswamy. 1University of Texas School of Public Health, 2University of Texas, MD Anderson Cancer Center, Houston, TX. Sponsor: M A Smith.

TUESDAY MORNING, MARCH 16
6:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: MOLECULAR/CHELULAR

Chairpersons: Elizabeth F. Wattenberg, University of Minnesota, Minneapolis, MN and Melissa A. Runge-Morris, Wayne State University, Detroit, MI

Displayed: 9:30 AM - 12:30 PM

Attended: 11:00 AM - 12:30 PM

#740 IDENTIFICATION OF THE PREDOMINANT SITE OF COVALENT BINDING OF ACRYLONITRILE TO RAT HEMOGLOBIN. J Li, F W Benz, W M Pierce, R C Feldhoff and D E Nerland. 1Departments of Pharmacology & Toxicology and 2Biochemistry, University of Louisville School of Medicine, Louisville, KY.

#741 CHARACTERIZATION OF HUMAN SERUM ALBUMIN REACTED WITH TRANS, TRANS-MUCONALDEHYDE, A HEMATOXIC BENZENE METABOLITE. B Winnik and G Witz. UMDNJ-Robert Wood Johnson Medical School and EOHSI, Piscataway, NJ.

#742 NITRIC OXIDE (NO) INHIBITS HEME OXYGENASE-2 (HO-2) THROUGH BINDING TO HEME REGULATORY MOTIFS: HO-2 IS A SUICIDE SINK FOR NO. Y Ding, W K McCoubrey, Jr, T J Huang and M D Malines. Departments of Biochemistry and Biophysics and of Environmental Medicine, University of Rochester School of Medicine, Rochester, NY.

#743 LIPIDS AND SERUM-DERIVED PROTEINS SEQUESTER NITRIC OXIDE. D E Hecket, B Billack, D M Porterfield, P J Smith, R P Malcho, J D Laskie. 1Rutgers University and 2UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ; 3Marine Biological Laboratory, Woods Hole, MA and 4University of Illinois, Chicago, IL.

#744 THE NOVEL TUMOR PROMOTER PALYTOXIN ACTIVATES p38 THROUGH DIFFERENT PROTEIN KINASE CASCADES IN COS7 AND HELA CELLS. S Li and E V Wattenberg. Division of Environmental and Occupational Health, School of Public Health, University of Minnesota, Minneapolis, MN.

#745 THE TEMPORAL EFFECTS OF THE DETOXIFICATION ENZYME INDUCER, BENZYL ISOTHIOCYANATE: ACTIVATION OF C-JUN N-TERMINAL KINASE PRIOR TO THE TRANSCRIPTION FACTORS AP-1 AND NFkB. E J Patten and M J DeLong. 1Nutrition and Health Sciences Program, School of Medicine and 2Department of Environmental and Occupational Health, School of Public Health, Emory University, Atlanta, GA.

#746 AH RECEPTOR AND NF-kB INTERACTION: FUNCTIONAL DOMAINS INVOLVED IN THE CROSS-MODULATION. Y Tian, S Ke, M S Denison, A B Rabson and M A Gallo. 1Department of Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ; 2Department of Environmental Toxicology, University of California, Davis, CA.

#747 REGULATION OF CONSTITUTIVE GENE EXPRESSION THROUGH AhR COMPLEX - Sp1 PROTEIN INTERACTIONS. F Wang and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#748 SELECTIVE INDUCTION OF Sp1 DNA ACTIVITY IN THE MOUSE BRAIN BY METHAMPHETAMINE. K M McClendon, S F All and N H Zawad. 1Meharry Medical College, Nashville, TN, 2National Center for Toxicological Research, Jefferson, AR.
ROLE OF HISTONE TAIL MOBILITY IN DNA REPAIR. V L Burnett1, M K Bowman1, J G Marx1, W Kim2, J J Hayes2 and D L Springer1. 1Molecular Biosciences Department, Pacific Northwest National Laboratory, Richland, WA; 2Department Biochemistry and Biophysics, University of Rochester, Rochester, NY.

EFFECT OF A SINGLE UV-INDUCED LESION ON DNA REPLICATION IN EXTRACTS OF NORMAL AND CANCER-FRONE HUMAN MUTANT CELLS. J Yao, J Elliott and M P Carty. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

THE INVOLVEMENT OF THE ESTROGEN RECEPTOR IN THE DIFFERENTIAL EXPRESSION OF METALLOTHIONEIN-1E IN ESTROGEN RECEPTOR-POSITIVE AND -NEGATIVE HUMAN BREAST CANCER CELL LINES. R Dutta, S H Garrett, M A Sens, S Sonjii, J H Todd, D A Sens. Department of Pathology, West Virginia University, Morgantown, WV.

MECHANISM OF ESTROGEN-MEDIATED INDUCTION OF DNA POLYMERASE GENE EXPRESSION IN MCF-7 HUMAN BREAST CANCER CELLS. I Samudio and S Safa. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

MOLECULAR ANALYSIS OF ESTROGEN RECEPTOR α (ERS) AND ERα-Sp1-MEDIATED TRANSACTIVATION: ROLE OF ACTIVATION FUNCTION 1. B Saville, M Wormke and S Safa. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

MOLECULAR CLONING OF THE REPTILIAN, ANOLIS CAROLINENSIS, ESTROGEN RECEPTOR LIGAND BINDING DOMAIN: COMPARATIVE AMINO ACID SEQUENCE ANALYSIS TO KNOWN ESTROGEN RECEPTORS. T R Zacharewski and J B Matthews. Department of Biochemistry and National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI.

MUTATIONAL ANALYSIS OF ALU SEQUENCES IN DES-INDUCED HAMSTER KIDNEY TUMORS. K P Singh and D Roy. Department of Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

11-DEOXY-16,16-DIMETHYL PROSTAGLANDIN E2 PROTECTS AGAINST RENAL TOXICITY IN RATS AND INDUCES SPECIFIC PROTEINS VIA A PUTATIVE THROMBOXANE RECEPTOR IN LLC-PK1 CELLS. K M Towndrow, S B Bratton, T J Monks and S S Lau. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

EXTENSIVE DEGRADATION OF DNA IN NUCLEAR EXTRACTS PREPARED FROM ATAXIA TELANGIECTASIA CELLS MAY BE RESPONSIBLE FOR THE DECREASE OF THE FIDELITY OF DOUBLE-BRANCH BREAK REPAIR IN THIS CELL LINE. Y Li and K Dixon. Department of Environmental Health, University of Cincinnati, OH.

TELOMETERS AND RECOMBINATION: END GAMES. S M Bailey1, M N Comfort2, J Meye1, T Rusetti1 and E H Goodwin1. 1Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM; 2University of Texas Medical Branch, Galveston, TX. Sponsor: B Lehner.

AN INVESTIGATION OF THE STRUCTURAL REQUIREMENTS FOR EFFICACY AND MECHANISM OF ACTION OF A SHORT TELOMERE MIMETIC PHOSPHOROTHIOATE Oligodeoxynucleotides (S-ODNs). T J Page1, J E Mata2 and P L Iversen1, 2. 1University of Nebraska Medical Center, Omaha, NE; 2AVI Biopharma, Corvalis, OR.

A NOVEL ASSAY FOR MITOCHONDRIAL DNA SYNTHESIS. W B Mattes, C T Cramer and C S Aaron. Investigative Toxicology, Pharmacia & Upjohn, Kalamazoo, MI.

MULTIPLEX PCR COUPLED WITH RANDOM AMPLIFIED POLYMORPHIC DNA (RAPID) AS A NOVEL METHOD TO DETECT MITOCHONDRIAL DNA POLYMORPHISMS IN HUMAN. Q Cai and D Roy. Department of Environmental Health Sciences, University of Alabama, Birmingham, AL.

DISRUPTION OF THE E-CADHERIN/CATENIN COMPLEX BY OXIDATIVE STRESS CORRELATES WITH PHOSPHORYLATION OF TYROSINE BUT NOT SERINE. A R Parrish, J M Catania and A J Gandolfi. Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ.
TAU PHOSPHORYLATION BY DIISOPROPYL PHOSPHOROFLUORIDATE (DFP)-TREATED HEN BRAIN SUPERNATANT INHIBITS ITS BINDING WITH MICROTUBULES: ROLE OF Ca2+/CALMODULIN-DEPENDENT PROTEIN KINASE II IN TAU PHOSPHORYLATION. R P Gupta and M B Abou-Dona. Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

THE ROLE OF cAMP SIGNALING ON INHIBITION OF IL-2, CREB AND NF-kB BY CANNABINOL. A C Herring and N E Kaminski. Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

PIVOTAL ROLE OF MITOCHONDRIA IN ARSENIC ACID INDUCED INTERLEUKIN-1α PRODUCTION IN MURINE KERATINOCYTES. E Corsini1, L. Asti2, B Vosianti1, M Marinovich1 and C L Galli1. 1Laboratory of Toxicology, Institute of Pharmacological Sciences, University of Milan, Milan, Italy; 2Centro Grandi Strumenti, Laboratory of Electron Microscopy, University of Pavia, Pavia, Italy.

INDUCTION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION ALLOWS THE DISTRIBUTION OF F-ACTIN AND MITOCHONDRIA IN L929 FIBROBLASTS. C L Neary and J L Faber. Department of Anatomy, Pathology and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

EFFECT OF VOMITOXIN (DEOXYNIVALENOL) ON THE BINDING ACTIVITY OF A NEGATIVE TRANSCRIPTION FACTOR FOR IL-2 BY IN MURINE EL-4 THYMOMA CELLS. J J Perks and G -H Yang. National Food Safety and Toxicology Center, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI.

AKT PHOSPHORYLATION OF p47PHOX PRODUCES ACTIVATION OF THE NADPH OXIDASE IN A CELL-FREE SYSTEM COMPARABLE TO AMPHIPHILE ACTIVATION. C R Hoyt1, P N Tschis2 and B M Babior1. 1The Scripps Research Institute, La Jolla, CA; 2Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA.

CONSTRUCTION AND CHARACTERIZATION OF A COLITOSIS NEGATIVE MUTANT IN V. CHOLERAE O139. C R Fiore1, R J Johnson1,2, J A Johnson1,2. 1University of Maryland, Baltimore, MD; 2Veterans Administration Medical Center, Baltimore, MD. Sponsor: K S Sajobi.

MOLECULAR PLAYERS IN INCREASED THIOACETAMIDE-HEPATIC INJURY AND DECREASED MORTALITY FOLLOWING DIET RESTRICTION. S K Ramah1, M G Soni1, J Seng2, J E A Leakey2 and H M Mehdendale1. 1Division of Toxicology & Louisiana Institute of Toxicology, NLU Health Sciences Center, Monroe, LA; 2Div. Microbiol & Chem, National Center for Toxicological Research, Jefferson, AR.

COMPETITIVE BINDING OF POSITIVE- AND NEGATIVE-ACTING TRANSCRIPTION FACTORS TO THE HUMAN CYPIIAI NEGATIVE REGULATORY ELEMENT. S M Smolinski, C M Garrett, M P Piechocki and R N Hines. Wayne State University, Detroit, MI.

USE OF DIFFERENTIAL DISPLAY FOR IDENTIFICATION OF PCN INDUCIBLE GENES IN RAT LIVER. L Maldonado-Baez1, H Shih2, L Quattrochi2, P Gazelian2 and B D Jiménez1. 1University of Colorado, Health Science Center, Denver, CO; 2University of Puerto Rico Department of Biochemistry, San Juan, PR.

EFFECTS OF MICROSOMAL ENZYME INDUCERS ON RAT MULTIDRUG RESISTANCE PROTEIN 2 (Mrp2). D R Johnson and C D Klaassen. University Kansas Medical Center, Kansas City, KS.

FLAVIN-CONTAINING MONOOXYGENASE 2: POLYMORPHISM CHARACTERIZATION AND DETERMINATION OF ALLELIC FREQUENCY IN AFRICAN AMERICANS, CAUCASIANS AND ASIANS. J R Whetstone1, N A Mercer1, D G McCarver1, D E Williams2, C-S Park3, Y -N Cha3 and R N Hines1. 1Wayne State University, Detroit, MI; 2Oregon State University, Corvallis, OR; 3Inha University, Incheon, Korea.

MOLECULAR MECHANISMS FOR THE TISSUE-SPECIFIC EXPRESSION OF THE RABBIT FLAVIN-CONTAINING MONOOXYGENASE 1 (FMO1) GENE. Z Luo and R N Hines. Wayne State University School of Medicine, Detroit, MI.

ISOLATION OF A FLAVIN-CONTAINING MONOOXYGENASE CDNA SEQUENCE FROM THE TELEOST RAINBOWTROUT (ONCORYNCHUS MYKISS). A El-Alfy and D Schenker. Pharmacology Department, Environmental Toxicology Research Program / ECHR, School of Pharmacy, University of Mississippi, University, MS.
TRANSCRIPTIONAL REGULATION OF THE RAT HYDROXYSTEROID SULFOTRANSFERASE (SULT-2A/41) GENE BY GLUCOCORTICOIDS, M Ringe-Morris and T A Kocarek. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.

INHIBITION OF RECOMBINANT HYDROXYSTEROID SULFOTRANSFERASES AND MICROSONAL ARYLSULFATASE C BY PENTACHLOROPHENOL. Y Liu, R I Sanchez, M W H Coughtrie and F C Kaufman. 1 Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; 2 Department Molecular and Cellular Pathology, University of Dundee, Dundee, Scotland.

DIFFERENTIAL SUBCELLULAR LOCALIZATION OF ENDOGENOUS AND TRANSFECTED SOLUBLE EPOXIDE HYDROLASE IN MAMMALIAN CELLS: EVIDENCE FOR ISOZYME VARIANTS. R T Mullen, R N Trelease, H Duerk, M Anand, B D Hammock, F Oesch and D F Grant. 1 Department of Plant Biology, Arizona State University, Tempe, AZ; 2 Institute of Toxicology, University of Mainz, Mainz, Germany; 3 Departments of Entomology and Environmental Toxicology, University of California, Davis, CA; and 4 Department of Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

PROFILE OF GLUTAMINE SYNTHETASE (GS) ACTIVITY IN METHYLMERCURY (MeHg)-EXPOSED ASTROCYTES. K H Tan, M Aschner and J W Allen. 1 Department of Life Sciences, Winston-Salem State University; 2 Department of Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

TUESDAY AFTERNOON, MARCH 16

TUESDAY AFTERNOON, MARCH 16
12:00 NOON - 1:00 PM
LA LOUISIANE BALLROOM
GRADUATE STUDENT LUNCHEON
Sponsored By: The Education Committee
Open to all graduate travel awardees and graduate student registrants, this luncheon includes announcement of the 1999 Graduate Student Fellowship recipients and opportunities to talk with SOT officers. Graduate students must sign up for this luncheon on the Annual Meeting registration form.

TUESDAY AFTERNOON, MARCH 16
12:00 NOON - 1:15 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS 308-210
SOT/EUROTOX DEBATE
MOTION: THE RESULTS OF MECHANISTIC TOXICITY STUDIES SHOULD SUPERSede AMBIGUOUS EPIDEMIOLOGICAL DATA.
Sponsored By: The SOT and EUROTOX (European Societies of Toxicology)
Moderator: Jay I. Goodman, Ph.D., Michigan State University, East Lansing, MI
It is not uncommon to be faced with situations where limited epidemiologic data (e.g., weak association, lack of consistency, questionable temporal relationship, dubious biological plausibility) are employed to raise serious questions concerning the possibility that exposure to a particular chemical or physical agent might affect humans adversely. Recent examples of this involve saccharin and bladder cancer, and chloroform and bladder cancer. The question as to how, and when, information concerning the mechanism of action of the chemical of interest may be employed to place limited epidemiologic data into proper perspective is an important current issue, which is the focal point of this debate.

Discussant for the motion: Samuel M. Cohen, Ph.D., MD, University of Nebraska Medical Center, Omaha, NE (SOT)

Discussant against the motion: Professor Julian Peto, Institute of Cancer Research, Sutton, Surrey (EUROTOX)
Today, tobacco use continues in about 25% of pregnancies, with additional gestational and childhood exposures to environmental tobacco smoke. Maternal smoking has been linked to low birth weight, increased perinatal morbidity and mortality, SIDS, and persistent deficits in learning and behavior. This symposium presents recent studies on effects of prenatal or early postnatal tobacco smoke (TS) exposure. Risks associated with maternal smoking as well as maternal and/or paternal exposure to second-hand smoke will be discussed. Recent studies which reveal lasting effects of prenatal and/or postnatal TS exposure on cognitive development in children, including reading and language, will be presented. Associations between maternal smoking and incidences of specific congenital malformations have been analyzed, including gene-environment interactions which may lead to increased risk of TS-induced birth defects. These studies will be reviewed and summarized. Animal models of developmental TS exposure will be reviewed, and new studies on the effects of perinatal environmental TS on lung development and airway reactivity in rats will be discussed. Nicotine in a known neurotransmitter. The effects of nicotine on the development of neurotransmitter systems and brain development in rats will be discussed in the context of TS-induced morbidity and SIDS in humans. Finally, these talks will be summarized in a risk assessment framework.

#781 1:30 THE DEVELOPMENTAL TOXICITY OF TOBACCO SMOKE. J M Rogers. Reproductive Toxicology Division, NHEERL, US EPA, Research Triangle Park, NC.

#782 1:40 ANALYSIS OF RISK TO BIRTH DEFECTS ASSOCIATED WITH SMOKING: CONSIDERING THE ROLE OF GENETIC ENVIRONMENT INTERACTIONS. T H Beaty. Department Of Epidemiology, School of Hygiene & Public Health, Johns Hopkins University, Baltimore, MD. Sponsor: J M Rogers.

#783 2:10 ENVIRONMENTAL TOBACCO SMOKE AND PERINATAL AIRWAY REMODELING. K E Pinkerton, K P Avadhani, J Bric, K Kott, J P Joad. University of California, Davis, CA.

#784 2:40 MATERNAL SMOKING DURING PREGNANCY: ARE THERE SIGNIFICANT LONG TERM COGNITIVE EFFECTS IN OFFSPRING? P A Fried. Department of Psychology, Carleton University, Ottawa, Canada. Sponsor: J M Rogers.

#785 3:10 DEVELOPMENTAL TOXICITY OF NICOTINE. T A Slatkin. Department of Pharmacology & Cancer Biology, Duke University Medical Center, Durham, NC.

3:40 CONCLUSION. M Golub. University of California, Davis, CA.

3:50 GENERAL DISCUSSION.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS 208-210

INNOVATIONS IN TOXICOLOGICAL SCIENCES: REGULATION OF GENE EXPRESSION VIA THE ELECTROPHILE RESPONSE ELEMENT

Sponsored By: The Mechanisms and Molecular Biology Specialty Sections

Chairperson: Kenneth S. Ramos, Texas A&M University, College Station, TX

Transcriptional activation and repression events are responsible for coordinate regulation of gene expression at all levels of biological organization. Because transcriptional events are susceptible to toxicant interference, and chemical injury often involves disruption of signal transduction to the nucleus, toxicologists have become interested in defining cis-acting elements and DNA-protein/protein-protein interactions which govern these processes. The multiplicity of transcriptional and signaling events triggered by oxidants and electrophiles are not yet fully understood. Of relevance within this context, are studies focusing on redox regulation of xenobiotic-responsive genes mediated by the Antioxidant/Electrophile Response Element (ARE/EpRE). The first two presentations in this symposium will discuss advances in the elucidation of molecular mechanisms by which reactive oxygen species activate the rat glutathione transferase and quinone reductase genes, and the putative transcriptional factors that mediate these responses. The third speaker will discuss the role of Nrf1 and Nrf2, and the other leucine zipper proteins, in the activation of ARE-regulated genes. This will be followed by two presentations focusing on the pathophysiological consequences of ARE/EpRE activation as it relates to the identification of a neural-specific ARE/EpRE sequence involved in neuroprotection, and the study of promoterspecific patterns of gene regulation via the ARE/EpRE following oxidant/electrophile injury to vascular cells.

#786 1:30 REGULATION OF GENE-EXPRESSION VIA THE ELECTROPHILE RESPONSE ELEMENT. K S Ramos. Center for Environmental and Rural Health and Department of Physiology and Pharmacology, Texas A&M University, College of Veterinary Medicine, College Station, TX.


#788 2:10 ANTIOXIDANT REGUALTION OF GENES ENCODING ENZYMES THAT DETOXIFY XENOBIOTICS AND CARCINOGENS. A K Jaiswal and V Radjendirane. Department of Pharmacology, Baylor College of Medicine, Houston, TX. Sponsor: K S Ramos.


#790 3:10 NAD(P)H:QUINONE OXIDOREDUCTASE 1 (QRI) AND THE ANTIOXIDANT/ELECTROPHILE RESPONSIVE ELEMENT (ARE/EpRE) IN CELLS OF NEURONAL ORIGIN. J A Johnson, J D Moehlenkamp, J K Padgitt, J M Lenius and N J Cherrington. Department of Pharmacology, Toxicology and Tera, University of Kansas Medical Center, Kansas City, KS.

#791 3:40 CELL AND PROMOTER SPECIFIC PATTERNS OF GENE REGULATION VIA THE ELECTROPHILE RESPONSE ELEMENT. K S Ramos, Y-H Chen, M T Holderman and K P Miller. Center for Environmental and Rural Health and Department of Physiology and Pharmacology, Texas A&M University, College of Veterinary Medicine, College Station, TX.

4:10 GENERAL DISCUSSION.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 207

PLATFORM SESSION: IMMUNE STIMULATION

Chairpersons: Robert W. Lange, University of Pittsburgh, Pittsburgh, PA and Neil R. Pumford, University of Arkansas Medical Sciences, Little Rock, AR

#792 1:30 TRICHLOROETHYLENE ACCELERATES AN AUTOIMMUNE RESPONSE IN MRL/+ MICE AT DOSES SIMILAR TO HUMAN EXPOSURE LEVELS. J M Griffin, K M Gilbert and N R Pumford. University of Arkansas for Medical Sciences, Little Rock, AR.

#793 1:45 INITIATION OF DRUG-INDUCED LUPUS BY DISRUPTION OF POSITIVE SELECTION OF T CELLS IN THE THYMUS. A Kretz-Rommel and R L Rubin. The Scripps Research Institute, La Jolla, CA.

#794 2:00 IMMUNOSTIMULATORY EFFECTS OF ANTI-DEPRESSANTS ON REPORTER ANTIGEN RESPONSE IN THE MODIFIED PLNA: ROLE OF SEROTONERGIC ACTIVITY. R H H Pieters, M Tiesjema, A Van der Pijl, W Seinen and R Albers. RITOX/Immunotoxicology, Utrecht University, The Netherlands. Sponsor: M van den Berg.

SOT
Society of Toxicology
38th Annual Meeting

#795 2:15 POPLITEAL LYMPH NODE RESPONSE TO STREPTOZOTOCIN IS UNDER TYPE-I CD8+ T-CELL CONTROL. G Choquet-Kastylevsky1,2, R Tedone1,2, J Kehr1, M-T Ducluzeau1, J-P Nicolas1 and J Descomtes1,2. 1Inserm U98-X; 2Department Pharmacology, Medical Toxicology and Environmental Medicine, Faculté de Médecine, Lyon-RTH Laennec, Lyon, France.

#796 2:30 TD1-SPECIFIC ANTIBODY GENERATION IS ALTERED IN TUMOR NECROSIS FACTOR RI/R2 DOUBLE KNOCKOUT MICE FOLLOWING EXPOSURE TO THE CHEMICAL. R W Lange1, J M Matheson2, R Lemus1, M I Luster2 and M H Karol1. 1Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; 2Toxicology and Molecular Biology Branch, NIOSH, Morgantown, WV.

#797 2:45 QUANTITATION OF IGE ON THE SURFACE OF BASOPHILS USING ANTI-IGE AND QUANTITATIVE FLUORESCENCE. K K Stank, H W Smith and D Wierda. Lilly Research Labs, Eli Lilly and Company, Greenfield, IN.


#800 3:30 ORAL SENSITIZATION TO FOOD PROTEINS; A BROWN NORWAY RAT FOOD ALLERGY MODEL. L M J Knippsels, A H Penninks and G F Houben. TNO Nutrition and Food Research Institute, Zeist, The Netherlands. Sponsor: B Kulig.

#801 3:45 LOCAL LYMPH NODE ASSAY: HAZARD IDENTIFICATION AND POTENCY ASSESSMENT. I Kimber1, D A Basketter2, P Harvey3 and R J Dearman1. 1Zeneca Central Toxicology Laboratory, Macclesfield, England; 2Unilever Safety and Environmental Assurance Centre, Sharnbrook, England; 3Health and Safety Executive, Bootle, England.

#802 4:00 EVALUATION OF TRANSDERMALLY-DELIVERED DRUGS USING THE LOCAL LYMPH NODE ASSAY: G C Llewellyn, J F Lockwood and D Wierda. Lilly Research Labs, Eli Lilly and Company, Greenfield, IN.

#803 4:15 A MODIFIED MURINE LOCAL LYMPH NODE ASSAY: A TWO-TIERED APPROACH TO IDENTIFY CONTACT (PHOTO)ALLERGENIC POTENTIAL. P Ulrich1, S Chibou1, A de Brugero de Fraissinet2, A Cordier2 and H W Voh3. 1Experimental Toxicology and Preclinical Safety, Novartis Pharma AG, Basel, Switzerland; 2Institute of Toxicology, Bayer AG, Wuppertal, FRG.

TUESDAY AFTERNOON, MARCH 16 1:30 PM - 4:30 PM
ERNST N. MORIAL CONVENTION CENTER ROOM 206
POSTER DISCUSSION SESSION; NASAL TOXICOLOGY


Displayed: 1:30 PM - 4:30 PM
Discussed: 2:30 PM - 4:30 PM

#804 3:00 THE USE OF COMPUTER MODELLING TO DEMONSTRATE THE 3D DISTRIBUTION OF ENZYMES WITHIN THE RAT NASAL CAVITY. D A Robinson1, J A Nash2, J R Foster3 and C J Reed1. 1School of Biomolecular Sciences, John Moores University, Liverpool, UK; 2Zeneca Central Toxicology Laboratory, Macclesfield, Cheshire, UK. Sponsor: E A Lock.

#805 3:15 AN INVESTIGATION INTO THE ANTIOXIDANT STATUS OF THE RAT NASAL CAVITY. C J Reed1, D A Robinson1, J R Foster2, J A Nash2 and E A Lock2. 1School of Biomolecular Sciences, John Moores University, Liverpool, UK; 2Zeneca Central Toxicology Laboratory, Macclesfield, Cheshire, UK.

#806 3:30 CORRELATION OF INHALED FORMALDEHYDE FLUX PREDICTIONS WITH REGIONAL DNA-PROTEIN CROSSLINK MEASUREMENTS IN RAT NASAL PASSAGES. A V Georgieva, R B Connolly, P M Schlosser and J S Kimbell. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

MODELING FORMALDEHYDE DOSIMETRY IN THE RESPIRATORY TRACT OF HUMANS. J H Overton, J S Kimbell, R P Subramaniam and F J Miller, 1 US EPA, NHEERL, Research Triangle Park, NC; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

COMPARISON OF MAGNETIC RESONANCE IMAGING (MRI) AND HISTOLOGY OF THE NASAL PASSAGES OF MICE. A J Wiethoff, J R Harkema and W E Brown, 1Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 2Department of Pathology, Michigan State University, East Lansing, MI.

EFFECTS OF PRE-EXISTING RHINITIS ON OZONE-INDUCED MUCOCILIARY METAPLASIA IN RATS. H Y Cho, J A Hotchkiss, C B Bennett and J R Harkema, Departments of 1Pharmacology & Toxicology, 2Pathology, Michigan State University, East Lansing, MI.

ACROLEIN-INDUCED NASAL VASODILATION IS CGRP- AND NO-MEDIATED. J B Morris, J Stanek and G Gianutsos, Toxicology Program, University of Connecticut, Storrs, CT.

ACUTE NASAL RESPONSE TO INSPIRED ACETALDEHYDE: ROLE OF SENSORY NERVES AND METABOLISM. J Stanek and J B Morris, Toxicology Program, University of Connecticut, Storrs, CT.

USING STEADY-STATE CLEARANCE MODELS TO ASSESS TARGET TISSUE METABOLIZED DOSE FOR INHALED VAPORS IN NASAL TISSUES AND IN SYSTEMIC ORGANS. R Sarangapani and M E Andersen, K.S. Crump Group, ICF Kaiser, Research Triangle Park, NC.

EFFECTS OF METHIMAZOLE ON THE OLFACTORY NEUROEPITHELIUM IN MICE. U Bergman and E B Brit sesso, 1Department Pharmacol Toxicol, SLU, Uppsala; 2Department Pharmaceut Bioso, Div Toxicol, Uppsala University, Uppsala, Sweden. Sponsor: T Malmsjo.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNST M. MORIAL CONVENTION CENTER ROOM R09

POSTER DISCUSSION SESSION 6: SAFETY ASSESSMENT OF BIOLOGICS AND BIOTECHNOLOGY DERIVED PRODUCTS

Chairpersons: Gruenken H. I. Wolfgang, Chiron Corporation, Emeryville, CA and Charles A. O'Neill, Genentech Inc., South San Francisco, CA

Displayed: 1:30 PM - 4:30 PM

Efficacy and safety of recombinant human insulin-like growth factor (rhIGF-I) in a canine model of osteoarthritis. G H I Wolfgang, L Seely, M Pike, P Hsu, D Novicki, C Harvala, S L Myers and K P Fritzker, Chiron Corporation, Emeryville, CA; 2Princetica, Worcester, MA; 3Indiana University School of Medicine, Indianapolis, IN; 4Mt Sinai Hospital, Toronto, Canada.


Comparison of the pharmacokinetic profile of a [3H]-cholesterol-conjugated and [3H]-unconjugated P=O MOE. R E Morgan, R S Geary, J Fitchett, M Winninan, M Manoharan and A Guzaev, Isis Pharmaceuticals, Carlsbad, CA.

The effects of modified phosphorothioate oligodeoxynucleotides (P=O ODN) targeting C-raf in the mouse. J Cornish, A de Puyter, A A Levin, D K Monteth, 1San Diego State University, San Diego, CA; 2Isis Pharmaceuticals, Carlsbad, CA.

4-week toxicity and toxicokinetic study of subcutaneously administered anakinra (IL-1ra) and orally administered methotrexate in rats. P S Cranmer, D M Miller, S M Henwood, B B Yang and H Davis, 1Amgen, Thousand Oaks, CA; 2Covance Laboratories, Madison, WI.
#820 CHRONIC TOXICITY ASSESSMENT OF SUBCUTANEOUS INJECTED PEG-THAMGDF IN RHESUS MONKEYS. K Allan1, D M Miller1, D Kornbrust2, N Gillett3, E Cheung1 and H Devitt1.
1 Amgen Inc., Thousand Oaks, CA; 2 Sierra Biomedical, Sparks, NV;


#822 A 13 WEEK TOXICITY STUDY OF OSTEOPROTEGERIN (OPG) IN THE CYNO-MOLGUS MONKEY. M E Cowen1, S Y Smith2, B Birkenstrand1, A Amicone1, C Dunstan1, A Leyshon2, H Davis3. 1 Amgen Inc., Thousand Oaks, CA; 2 ClinTrials BioResearch Ltd, Montreal, Que., Canada.

#823 A SAFETY EVALUATION OF HEMOLINK™, AN O-RAFINOSE, CROSS-LINKED HUMAN HEMOGLOBIN-BASED OXYGEN CARRIER. E P Zimmerman1, G P Biro2, P M Watts1, N J Guliker1 and C B Spainhour1. 1 Chrysalis Preclinical Services-North America, Olyphant, PA; 2 Hemosol, Inc., Etobicoke, Toronto, Ontario, Canada; 3 Consultant In Toxicology, Mountain View, CA.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNST H. MORIAL CONVENTION CENTER EXHIBIT HALL A

POSTER SESSION: IMMUNE SUPPRESSION: METHODS, MECHANISMS AND EFFECTS

Chairpersons: Gary J. Rosenthal, RxKinetix, Louisville, CO and Peter T. Thomaz, Covance Laboratories, Inc., Madison, WI

Displayed: 1:30 PM - 4:30 PM

Attended: 1:30 PM - 3:00 PM

#824 INHIBITION OF NF-κB IN PRIMARY HUMAN CD19+ B LYMPHOCYTES BY HYDROQUINONE. D W Pyatt, J Yang, W S Stillman and R D Ions. Molecular Toxicology and Environmental Health Sciences Program, University of Colorado HSC, Denver, CO.

#825 INHIBITION OF MAPK (ERK) ACTIVATION BY CANNABINOL IN PMA/IO-STIMULATED MOUSE SPLENCYTES. B L Faubert and N E Kaminski. Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#826 CANNABINOL INHIBITION OF INTERLEUKIN-4 EXPRESSION IN EL4IL2 CELLS IS MEDIATED THROUGH DOWN-REGULATION OF NF-AT. T R Jan and N E Kaminski. Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#827 THE ROLE OF CALCIUM AND CYCLOXGENASE ACTIVITY ON THE INHIBITION OF IL-2 BY THE ENDGENOUS CANNABINOID, 2-ARACHIDONYLGLYCEROL. Y L Ouyang, S S Yee and N E Kaminski. Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#828 DEOXYNIVALENOL (VOMITOXIN) AND TNFα ACT SYNERGISTICALLY TO INDUCE THYMOCYTE APOPTOSIS THROUGH MECHANISMS INVOLVING INTRACELLULAR Ca2+, REACTIVE OXYGEN SPECIES, MAPKs AND CASPASE3. K L Uzarbi and J J Pestka. Department of Food and Science and Human Nutrition, Michigan State University, East Lansing, MI.

#829 POTENTIAL AND ATTENUATION OF TRANSCRIPTION FACTOR ACTIVITY IN MURINE SPLEEN FOLLOWING ORAL EXPOSURE TO THE TRICHTHECENE VOMITOXIN (DEOXYNIVALENOL). H R Zhou and J J Pestka. Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI.

#830 DOWN-REGULATION OF AN ENDOPLASMIC RETICULUM CHAPERONE, GRP78/BIP, BY VOMITOXIN (DEOXYNIVALENOL) IN MURINE EL-4 THYMOMA CELLS. G -H Yang1, 2, S Li1 and J J Pestka1, 2. 1 National Food Safety and Toxicology Center, 2 Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI.

#831 INHIBITION OF HUMAN CYTOKINE PRODUCTION BY PHENOLIC COMPONENTS OF CIGARETTE TAR. B M Freed, L T Rael, S Perlman and M T Aubrey. Division of Allergy and Clinical Immunology, Department of Medicine, University of Colorado Health Sciences Center, Denver, CO.
DOSE RELATED SUPERINDUCTION AND SUPPRESSION OF CYTOKINES BY MACROCYCLIC TRICHOThECENES IN MURINE CLONAL T-CELL AND MACROPHAGE MODELS. Y Chung1,2, M Lee1,2, S Li1,2, B B Jarvis3 and J J Patkar1,2. 1Department of Food Science and Human Nutrition, 2National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI; 3Department of Chemistry and Biochemistry, University of Maryland, College Park, MD.

POTENTIATION OF THE INHIBITORY EFFECT OF HYDROQUINONE ON HUMAN TNFα PRODUCTION BY OXIDATIVE STRESS. L T Rael, S Perlman, M T Aubrey and B M Freed. Division of Allergy and Clinical Immunology, Department of Medicine, University of Colorado Health Sciences Center, Denver, CO.

SUPPRESSION OF IL-2 GENE EXPRESSION IN MURINE SPLENOCYTES AND THYMOCYTES BY MICROCYSTINS AND NODULARIN. S S Ye1, H-M Oh2 and K-H Yang1. 1Department of Biological Sciences, Korea Advanced Institute of Science and Technology, Taejon, Korea; 2Environmental Microbiology, Korea Research Institute of Bioscience and Biotechnology, Taejon, Korea.

FETAL THYMIC ATROPHY FOLLOWING LOW-LEVEL MATERNAL TCDD EXPOSURE IS CHARACTERIZED BY THYMOCYTE HYPOCELLULARITY WITHOUT ALTERED CD4 AND CD8 MARKER EXPRESSION. J E Whaley and S D Holladay. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

ACUTE ADMINISTRATION OF ETHANOL IN VIVO DECREASES THE ACTIVATION OF NK CELLS BY POLY 1: C IN VIVO OR IN VITRO: AN IN VITRO SYSTEM FOR MECHANISTIC STUDIES. S D Collier and S B Pruett. Department of Cellular Biology and Anatomy, Louisiana State University Medical Center, Shreveport, LA.


A STRUCTURE ACTIVITY RELATIONSHIP OF VARIOUS POLYCHLORINATED DIBENZO-p-DIOXIN CONGENERS: INHIBITION OF IMMUNOGLOBULIN EXPRESSION VERSUS AβR-MEDIATED ENZYME INDUCTION. C E W Sulentic, M P Hoisappel and N E Kaminski. 1Department of Pharmacology & Toxicology, Michigan State University, East Lansing, MI; 2Dow Chemical Company, Midland, MI.

IMMUNOMODULATION OF MACROPHAGE RESPONSE BY 2,4-DICHLOROPHENOXYCETIC ACID: TIME- AND TISSUE-SPECIFIC DIFFERENCES IN MUMMICHOG (FUNDULUS HETEROCLITUS). C Baier-Anderson, R S Anderson and M L Haasch. University of Maryland, Chesapeake Biological Laboratory, Solomons, MD.

INHIBITION OF THE LYSOSOMAL PROTEASE CATHEPSIN L BY TRIVALENT ARSENIC. M T Harrison and K L McCoy. Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA. Sponsor: K L White.

IMMUNE ALTERATIONS IN SPRAGUE DAWLEY RATS EXPOSED TO GENISTEIN FOR 77 DAYS. J A McCoy1, R D Brown1, D L Musgrove1, S S Griffey1, D R Germain2 and K L White, Jr1. Virginia Commonwealth University, Richmond, VA; 2NIEHS, Research Triangle Park, NC.

GENDER-BASED DIFFERENTIAL HUMORAL RESPONSES TO A FOREIGN VERSUS SELF ANTIGEN AFTER IN VIVO EXPOSURE TO LEAD. T L Bunn, J A Marsh, K A Golemboski and R R Dietert. Department of Microbiology and Immunology, Cornell University, Ithaca, NY.

ENDOGENOUS METALLOTHIONEIN ALTERS IMMUNE RESPONSES TO EXTERNAL STIMULATION. K C Crowthers and M A Lynes. Department of Molecular and Cell Biology, University of Connecticut, Storrs, CT.

TOPICAL PERMETHRIN EXPOSURE ALTERS SKIN IMMUNE RESPONSES AND PRODUCES SYSTEMIC IMMUNE EFFECTS. K Pumareewattana1, S D Holladay1, B J Smith1 and B L Blaylock2. 1Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA; 2College of Pharmacy, Northeast Louisiana University, Monroe, LA.

COMBINED EFFECTS OF CHEMICAL AND NATURAL STRESSORS ON NONSPECIFIC IMMUNITY IN RED VERSUS BLACK ABALONE. L M Martello1 and R S Tjeerdema2.
1Department of Biology, 2Department of Chemistry and Biochemistry, University of California, Santa Cruz, Santa Cruz, CA.

EFFECTS OF SUB-ACUTE IN VIVO EXPOSURE OF FORMALDEHYDE (HCHO) ON FISH. R M Gogal Jr, B J Smith, J L Robertson, K A Douglas, S A Smith and S D Holladay. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

CHEMICAL EXPOSED TILAPIA SHOW SIMILAR IMMUNE EFFECTS AS RODENTS. S D Holladay, D A Smith, S A Smith and G G Schurg. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

ROLE OF METABOLISM IN THIOACETAMIDE-INDUCED SUPPRESSION OF ANTIBODY RESPONSE IN MALE BALB/c MICE. T C Jeong, H K Gu, H C Kim and J K Koh. Toxicology Research Center, Korea Research Institute of Chemical Technology, Taejon, Korea.

ETHANOL DECREASES HOST RESISTANCE TO PULMONARY METASTASES IN A MOUSE MODEL: ROLE OF NATURAL KILLER CELLS AND THE ETHANOL-INDUCED STRESS RESPONSE. W-J Wu and S B Pruet. Department of Cellular Biology & Anatomy, Louisiana State University Medical Center, Shreveport, LA.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: PESTICIDES
Chairpersons: Tirimaru V. Reddy, US EPA, NERL, Cincinnati, OH and Bonnie B. Eisner, Oregon State University, Corvallis, OR

Displayed: 1:30 PM - 4:30 PM
Attended: 3:00 PM - 4:30 PM
#859 MORPHOLOGICAL EVALUATION OF PROMOTION AND PROTECTION IN ORGANOPHOSPHORUS ESTER-INDUCED DELAYED NEUROPATHY (OPIDN) IN HENS USING PERIPHERAL NERVE TEASED MYELINATED FIBERS. C Massicotte, K D Inzana, M Ehrich and B S Jortner. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#860 COMPARATIVE EFFECTIVENESS OF ORGANOPHOSPHORUS (OP) PROTOXICANT ACTIVATING SYSTEMS IN NEUROBLASTOMA CELLS AND BRAIN HOMOGENATES. M Ehrich, L Correll and D Barber. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#861 INTERACTIONS OF ACETYLCHOLINESTERASE (ACHE) WITH ORGANOPHOSPHATES (OPS). S A Kardos and L G Sullatons. UMDNJ, Newark, NJ.

#862 MORPHOLOGIC STUDY OF NON-LETHAL CYTOPATHIC EFFECTS OF PARATHION AND PAROXON IN SH-SY5Y HUMAN NEUROBLASTOMA CELLS. B S Jortner, D Barber, S K Perkins, J Hinkley and M Ehrich. Laboratory for Neurotoxicity Studies, Virginia Tech, Blacksburg, VA.

#863 CHANGES IN ACTIVATION AND DETOXIFICATION ENZYMES RESPONSIBLE FOR ORGANOPHOSPHATE (OP) METABOLISM DURING PREGNANCY. D M Grunl, R C Zangar2, A L Bames2, D L Springer1 and C Timchalk1. 1Battelle, Pacific Northwest Division, Richland, WA; 2Associated Western Universities, Richland, WA.

#864 ORGANOPHOSPHORUS COMPOUND-INDUCED MODIFICATION OF SH-SY5Y HUMAN NEUROBLASTOMA CELL MITOCHONDRIAL TRANSMEMBRANE POTENTIAL. K Carlson and M Ehrich. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#865 EVIDENCE OF AZINPHOS-METHYL HEMOGLOBIN ADDUCT. B B Eiser and J J Jenkins. Oregon State University, Corvallis, OR.

#866 THE USE OF OPH ENZYME FOR THE DETOXIFICATION OF METHYL PARATHION. T Cha1, J R Wilt2, E Tiffany-Castiglioni1 and K C Donnelly1. 1Depts of VAPH and 2Biochemistry and Biophysics, Texas A&M University, College Station, TX.

#867 INHIBITION OF BRAIN SYNAPTOSOMAL Ca-ATPase BY ORGANOPHOSPHORUS (OP) COMPOUNDS. D Barber, J Hunt and M Ehrich. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#868 INCREASED IN VITRO ANTICHOLINESTERASE ACTION OF THE INSECTICIDE CHLORPYRIFOS WHEN TESTED IN MIXTURES CONTAINING SEVERAL POLYCYCLIC AROMATIC HYDROCARBONS. R V Navoa and D A Jett. Department of Environmental Health Sciences, The Johns Hopkins University, Baltimore, MD.

#869 cAMP-DEPENDENT PROTEIN KINASE (PKA) ACTIVITY IN THE BRAINS OF RATS AFTER ACUTE EXPOSURE TO CHLORPYRIFOS. D A Jett and R V Navoa. Department of Environmental Health Sciences, The Johns Hopkins University, SHPH, Baltimore, MD.

#870 ALTERATIONS OF RAT BRAIN DNA AND NEUROTROPHIN LEVELS BY PRENATAL EXPOSURE TO CHLORPYRIFOS. K P Darl1, T L Lassiter1,2, C Lau3 and S Barone Jr.1. 1Neurotoxicology and 2Reproductive Toxicology Division, NHEERL, US EPA, Research Triangle Park, NC; 3Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#871 AN EVALUATION OF THE SIGNIFICANCE OF DICHLORVOS (DVVP) INDUCED ALTERATIONS OF CHOLINESTERASE (CHE) LEVELS IN BIOLOGICAL SYSTEMS: FINAL REPORT OF THE EXPERT PANEL. B K Bernard1, R J Richardson2, R K Albuquerque2, M Lotti3 and R Snyder2. 1SRA International, Washington, DC; 2Univ Mich., Ann Arbor, MI; 3Univ Maryland, Baltimore, MD; 4Univ Degli Studi di Padova, Padova, Italy; 5Rutgers University, Piscataway, NJ.

#872 FUR RESIDUE AND CHOLINESTERASE INHIBITION OF DOGS DIPPED WITH CHLORPYRIFOS OR PHOSMET. S Boone, J Tyler and J E Chambers. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Miss State, MS.

#873 POSSIBLE INFLUENCE OF VITELLOGENIN SYNTHESIS ON THE TOXICITY OF CHLORPYRIFOS IN CHANNEL CATFISH. J R Richardson and J E Chambers. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.
#874 COMPARATIVE CHOLINERGIC NEUROTOXICITY OF ORAL CHLORPYRIFOS EXPOSURES IN NEONATAL AND ADULT RATS. Q Zheng, K Oliiver, Y Won and C Pope. Div. Toxicol., Northeast LA University, Monroe, LA.

#875 RESULTS OF A 2-MONTH CHLORPYRIFOS FEEDING STUDY IN ADULT, MALE RATS. D L Hunter, R S Marshall, T L Lassiter, S B McMaster and S Padilla, NHEERL, US EPA, Research Triangle Park, NC; Curriculum in Toxicology, UNC-CH, Chapel Hill, NC.

#876 TIME OF ADMINISTRATION AFFECTS ORGANOPHOSPHATE PESTICIDE-INDUCED ALTERATIONS IN BODY TEMPERATURE. J M Kuperberg, K Henderson, K F A Soliman, C M Teaf and M G Kolsa, Environmental Toxicology Graduate Program, Florida A&M University, Tallahassee, FL; Center for Biomedical & Toxicological Research, Florida State University, Tallahassee, FL.

#877 ERYTHROCYTE ACETYLCHOLINESTERASE ACTIVITY IN A KOREAN POPULATION. K H Lee, W G Chung, C S Park, J H Kang, H M Baek, H K Roh and Y N Cha, Department of Pharmacology and Toxicology, College of Medicine, Inha University, Incheon, Korea.

#878 REVERSIBLE INHIBITION OF CHOLINESTERASE BY SPIN TRAPPING AGENTS. D Milatovic and W D Dettbarn, Vanderbilt University, Department of Pharmacology and Neurology, Nashville, TN. Sponsor: R C Gupta.

#879 PIPERONYL BUTOXIDE POTENTIATES THE SYNAPTOSOME ATPase INHIBITING EFFECT OF PYRETHRIN. I Kakko, T Toimela and H Tähti, University of Tampere, Medical School, Tampere, Finland. Sponsor: K Savolainen.

#880 BIOCHEMICAL AND MICROSCOPIC CHANGES IN DIAPHRAGM MUSCLE BY ACUTE CARBAMATE TOXICITY. R C Gupta, W-D Dettbarn, R K Sanekii and J T Goad, Murray State University, Hopkinsville, KY; Vanderbilt University, Nashville, TN.

#881 RELATIVE CONTRIBUTION OF TRANSMITTER RELEASE AND GABA ANTAGONISM IN THE ACTIONS OF CYCLODIENES ON THE MURINE NIGROSTRIATUM. E R Freeborn, R Barlow, M L Kirby and J R Bloomquist, Department of Entomology, Virginia Polytechnic Institute and State University, Blacksburg, VA.

#882 DEET BLOOD LEVEL STUDIES IN RATS FOLLOWING A SINGLE ORAL ADMINISTRATION AND SINGLE AND REPEATED DERMAL APPLICATIONS. T G Osmint, M W Gill, K L Gabriele, S J Hermansen, C S Johnson and Son, Inc., Racine, WI; Toxicology/Regulatory Services, Inc., Charlottesville, VA; McLaughlin Gormley King Company, Minneapolis, MN; Schering-Plough Health Care Products, Memphis, TN.

#883 PARADOXICAL ALTERATION OF DIBROMOETHANE (EDB) INDUCED NEPHROTOXICITY BY ADRENERGIC AGENTS. S Babu, R Francisco, J McCluskey, C Murcacho and R H Harbison, Department of Environmental and Occupational Health, College of Public Health and Department of Pathology, College of Medicine, University of South Florida, Tampa, FL.

#884 COMPARISON OF KINETIC PARAMETERS FOR IN VITRO METABOLISM OF ALACHLOR AND 2-CHLORO-N-(2,4-DIETHYLPHENYL) ACETAMIDE (CDEPA) IN MOUSE, RAT AND HUMAN. S C Coleman, S L Liu, R L Rose and E Hodgson, Department of Toxicology, North Carolina State University, Raleigh, NC.

#885 A COMPARATIVE ANALYSIS OF DNA ADDUCT FORMATION BY ALACHLOR METABOLITES IN VITRO AND IN VIVO IN RAT LIVER AND OLFACTORY TISSUES BY 32P-P-POSTLABELING. D A McLaughlin, S A Meyer and R L Rose, North Carolina State University, Raleigh, NC.

#886 THE RATIONAL SELECTION OF HPPD INHIBITORS FOR AGRICHEMICAL AND PHARMACEUTICAL USE. W M Provans, E A Lock, M K Ellis and S Robinson and S Lindstedt, Genec, Central Toxicology Laboratory, Macclesfield, Cheshire, UK; 2Department of Clinical Chemistry, Gothenburg University, Sahlgrens Hospital, Gothenburg, Sweden.

#887 BLOOD PROTEINS AND DNA ADDUCTS OF ATRAZINE IN PEROMYSCUS LEUCOPUS AS BIOLOGICAL INDICATORS OF TRIAZINE HERBICIDE EXPOSURES IN THE ENVIRONMENT. T Y Reddy, H Wang, B Wiechman, F B Daniel and G Toth, US EPA, NERL, Cincinnati, OH; PAI, West Chester, OH.

#888 QUANTITATION OF ATRAZINE IN HAIR. D L Hubbard, D G Wilkins and D E Rollins, Center for Human Toxicology, Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.
AGGREGATE EXPOSURE MODEL FOR PESTICIDE DRIFT. H E Daly, C Schmidt and B D Beck. Gradient Corporation, Cambridge, MA.

DEVELOPMENT OF AN IMMUNOASSAY FOR THE DETERMINATION OF HERBICIDE IN SEMEN. J C Hall1, L Ritter2, T Arbuckle3 and S Deshpande1. 1 University of Guelph, Guelph, Ontario, Canada; 2Canadian Network of Toxicology Centres, University of Guelph, Guelph, Ontario, Canada; 3Health Canada, Ottawa, Ontario, Canada.

ROLE OF MDR2 P-GLYCOPROTEIN IN THE CHOLESTASIS MEDIATED BY ESTRADIOL-17β-(3-D-GLUCURONIDE) (Ε217G) IN ISOLATED PERFUSED MOUSE LIVER. L Huang and M Vore. Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

HEPATOBILARY DISPOSITION OF ACETAMINOPHEN AND ITS METABOLITES IN MALE CD-1 MICE PRETREATED WITH CLOFIBRATE. C Chen1, G Hennig2, D J McCann3 and J E Manautou 1. Departments 1Pharmaceutical Sciences and 2Pathobiology, University Connecticut, Storrs, CT, and 3Drug Disposition & Metabolism Department, Zeneca Pharmaceuticals, Wilmington, DE.

HEPATIC PLASMA MEMBRANE ATP-DEPENDENT TRANSPORT PROTEIN EXPRESSION FOLLOWING INDUCTION OF HEPATOCYSTECELLULAR PROLIFERATION IN VIVO. G Hennig2, C Chen 1, H Whiteley1, D J McCann1 and J E Manautou 1. Departments 1Pharmaceutical Sciences and 2Pathobiology, University Connecticut, Storrs, CT, 3Drug Disposition & Metabolism Department, Zeneca Pharmaceuticals, Wilmington, DE.

INVERSE ROLES OF TUMOR NECROSIS FACTOR-α AND NITRIC OXIDE IN ACUTE LIVER INJURY INDUCED BY CARBON TETRACHLORIDE. L A Morio1, T Chui1, M Marini2 and D L Laskin 1. Joint Graduate Program in Toxicology, Rutgers University and UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ; 2Memorial Sloan-Kettering Cancer Center, New York City, NY.

TOXICITY OF CONCANAVALIN-A AND CADMIUM IN IL-6 GENE KNOCK-OUT MICE. O Molotkov, M Satoh and C Tohyama. National Institute for Environmental Studies, Tsukuba, Japan

HIGHER EFFICIENCY OF THE PHOSPHORYLATIVE SYSTEM OF DIABETIC GOTO-KAKIZAKI (GK) RATS. C M Palmeira1, F M L Ferreira1, R Seiça2, Ken-ichi Suzuki3 and M S Santos1. 1Department of Zoology, Center for Neurosciences of Coimbra, University of Coimbra, Portugal; 2Faculty of Medicine, Center for Neurosciences of Coimbra, University of Coimbra, Portugal; 3Department of Medicine, Toboka Kosei-Nenkin Hospital, Sendai, Japan. Sponsor: K B Wallace

MECHANISM OF INHIBITION OF RAT LIVER CLASS 2 ALDH BY 4-HYDROXYNONENAL. SW Luckey, R B Tjalkens and D R Petersen. Molecular Toxicology and Environmental Health Program, University of Colorado Health Sciences Center, Denver, CO.
TUMOR NECROSIS FACTOR RECEPTOR (TNFR) SIGNALING ON CELLS OF HEMPOIETIC ORIGIN CONTRIBUTES TO DIMETHYL-NITROSAMINE (DMN)-INDUCED HEPATOTOXICITY. D G Fraser, V R Lappi, M S Rutherford and L E Schook. Department of Veterinary Pathobiology, University of Minnesota, St Paul, MN.

EFFECT OF DICLOFENAC ON CELL FUNCTION AND PROTEIN BINDING IN PRECISION-CUT WISTAR RAT, Cynomolagus Monkey and Human Liver Slices. S J Hasal, M A Mehesy, E E Cruz, A B Pollack, J Mangold and A Vickers. Novartis Institute for Biomedical Research, East Hanover, NJ.

ROLE OF P4502E1 IN RETINOL'S ATTENUATION OF CARBON TETRACHLORIDE HEPATOTOXICITY IN THE MOUSE. R E Inder, B J Bray and R J Rosengren. University of Otago Medical School, Dunedin, New Zealand.

INDOXYLANINE GREEN PRETREATMENT DOES NOT ALTER SUSCEPTIBILITY TO ACETAMINOPHEN HEPATOTOXICITY IN MALE CD-1 MICE. V M Silva1, G Henning2, H Whiteley2 and J E Manautou1. Departments of 1Pharmaceutical Sciences and 2Pathobiology, University of Connecticut, Storrs, CT.

EFFECTS OF WEEKLY DAPM EXPOSURES ON LIVER AND LUNG IN FEMALE RATS R R Williams, V Santa Cruz, H Liu, T Dugas and M F Kanz. Pathology Department, University of Texas Medical Branch, Galveston, TX.

INCREASES IN ENTEROCYTE GLUTATHIONE AND ALKALINE PHOSPHATASE AS POTENTIAL ADAPTIVE RESPONSES TO DICLOFENAC-INDUCED ENTEROPATHY. B K Shipp1, C R Atchison2, L Kaphalia2, S Abdel-Rahman1 and M T Moslen2. Departments of 1Preventive Medicine and Community Health and 2Experimental Pathology, The University of Texas Medical Branch, Galveston, TX.

CLONING AND EXPRESSION OF THREE HUMAN INTESTINAL UDP-GLUCURONOSYLTRANSFERASES (UGTs): IA5, IA8 and IA10. Z Cheng1, A Radominska-Pandya2 and T R Tephy1. 1Department of Pharmacology, University of Iowa, Iowa City, IA; 2Department Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR.

DO DICLOFENAC PROTEIN ADDUCTS PLAY A CAUSAL ROLE IN SMALL INTESTINAL ULCEROGENESIS? C R Atchison1, A B West1, A Balakumaran1, D H Daiker1, J F Aronson1, L R Poh2 and M T Moslen1. 1Department of Pathology, The University of Texas Medical Branch, Galveston, TX; 2Laboratory of Molecular Immunology, NIH, Bethesda, MD.

EFFECT OF INTERMITTENT EXPOSURES OF AFLATOXIN B1 ON HEPATIC AND TESTICULAR GLUTATHIONE S-TRANSFERASE IN RATS. S C Sahu1, M W Chou2, R E Sotomayor1 and D M Hinton1. 1CFSAN and 2NCTR, Food and Drug Administration, Washington, DC.


CADMIUM PRETREATMENT PROTECTS METALLOTHIONEIN-NULL MICE AGAINST TESTICULAR TOXICITY BUT NOT HEPATOTOXICITY. S S M Habeebu, J Liu, Y P Liu and C D Klaussen. University Kansas Medical Center, Kansas City, KS.

INHIBITION OF CONJUGATION AS A TARGET FOR ACETAMINOPHEN (APAP) TOXICITY IN CULUTURED HUMAN HEPATOCYTES. V E Kostrubsky1, J F Sinclair3, K Dorko1, J E Esplien1, D Beer-Stolz2, S G Wood3, P R Sinclair3, S A Wrightson4 and S C Strom1. 1Departments Path. & 2Cell Biol., University Pittsburgh Medical Center, Pittsburgh, PA; 3VA Medical Center, WRJ, VT & Departments of Biochem. & Pharmacol./Toxicol, DMS, Hanover, NH; 4Lilly Research Laboratories, Indianapolis, IN.

SUSPENSIONS OF FRESHLY ISOLATED RAT HEPATOCYTES GENERATE HIGH LEVELS OF NITRIC OXIDE. F A Nicholls-Olzentaki, M A Tirmenstein and M W Fariss. College of Pharmacy, Washington State University, Pullman, WA.

VALPROIC ACID HEPATOTOXICITY AND PROTECTION BY GLYCYNE. C-P Siegers, M Dies1, J Hildebrandt and R Pents. Institute of Toxicology, Medical University of Lübeck, Germany; 1Institute of Pharmacology and Toxicology, University of Rostock, Germany.
TOXICITY OF ACRYLATES IN COMBINATION; INVESTIGATIONS IN HUMAN CELL CULTURES AND THE ISOLATED PERFUSED RAT LIVER. C-P Siegers, J Freudenstein,1 M Tegtmeier1 and O Strubelt, Institute of Toxicology, Medical University of Lübeck, Germany; 1Schaper & Brümmer, Salzgitter-Ringelheim, Germany.

COCAINE-PROTEIN ADDUCTS IN MOUSE LIVER: COMPARISON OF DETECTION BY RADIOCHEMICAL AND IMMUNOCHEMICAL METHODS. F M Nidkum-Moffor and S M Roberts. Center for Environmental & Human Toxicology, University of Florida, Gainesville, FL.

CYTOPROTECTION FROM THIOACETAMIDE-INDUCED LIVER INJURY ASSOCIATED WITH HEAT SHOCK PROTEIN INDUCTION. J K Toxen and S M Roberts. Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL.

ENHANCED BIOACTIVATION AND IMPAIRED TISSUE REPAIR IN THIOACETAMIDE HEPATOTOXICITY IN DIABETIC RATS. T Wang,1 M J J Ronis2 and H M Mehendale1. 1Division of Toxicology and Louisiana Institute of Toxicology, College of Pharmacy, Northeast Louisiana University Health Sciences Center, Monroe, LA; 2Department of Pediatrics, University of Arkansas for Medical Sciences and Arkansas Children’s Hospital Research Institute, Little Rock, AR.

CHRONIC ENERAL ETHANOL CAUSES TRANSDUCTION OF ADENO-ASSOCIATED VIRUS IN THE LIVER. M D Wheeler1, H Kono1, D McCarty2, R J Samulski2 and R G Thurman1. 1Laboratory of Hepatobiology and Toxicology and 2Gene Therapy Center, University of North Carolina, Chapel Hill, NC.

INHIBITION OF FAS-RECEPTOR (CD95)-INDUCED CASPASE ACTIVATION AND APOPTOSIS BY ACETAMINOPHEN IN MOUSE LIVER. H Jaeschke and J A Lawson. Pharmacia & Upjohn, Inc., Kalamazoo, MI.

EFFECTS OF ACUTE ALCOHOL EXPOSURE ON HEPATIC PARTITIONING OF CARBON TETRACHLORIDE: AN ADDITIONAL MECHANISM FOR ALCOHOL-MEDIATED POTENTIATION. J K Stanton1, Y M Sey2 and J E Simmons2. 1UNC-CH School of Public Health, Chapel Hill, NC; Benchmark Environmental Corporation, White Rock, NM; 2US EPA, NHEERL, Research Triangle Park, NC.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNST M. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: ANTIOXIDANTS AND OXIDATIVE INJURY

Chairpersons: Valerian E. Kagan, University of Pittsburgh, Pittsburgh, PA and Satu M. Somani, Southern Illinois University, Springfield, IL

Displayed: 1:30 PM - 4:30 PM

Attended: 3:00 PM - 4:30 PM

ANTIOXIDANT AND ANTIHEPATOTOXIC ACTIVITIES OF PHENYLATED FLAVONOIDS FROM HOPS. R J Rodriguez1, C L Miranda2, S Kingkeohol3, J F Stevens3, M L Deinzer3 and D R Buhler2. 1College of Pharmacy, 2Department of Environmental and Molecular Toxicology, and 3Department of Chemistry, Oregon State University, Corvallis, OR.

PROTECTION BY ZINC AGAINST ACUTE ETHANOL HEPATOTOXICITY AND ITS RELATION TO METALLOTHIONEIN PRODUCTION. C J Chen, H-Y Wu and Y J Kang. Division of Gastroenterology/Hepatology, Department of Medicine, University of Louisville, KY.

DOSE RESPONSE OF ETHANOL IN RELATION TO THE ANTIOXIDANT DEFENSE SYSTEM OF THE LIVER, LUNG AND KIDNEY IN RATS. R B Scott, K Husain, K S Reddy, L P Rybak and S M Somani. Southern Illinois University School of Medicine/Departments of Pharmacology and Surgery, Springfield, IL.

TIME COURSE RESPONSE OF ETHANOL ON ANTIOXIDANT DEFENSE SYSTEM OF BRAIN, HEART AND LIVER OF RAT. K S Reddy, R B Scott and S M Somani. Department of Pharmacology, Southern Illinois University School of Medicine, Springfield, IL.

PERIPHERALLY ADMINISTERED SODIUM AZIDE STRONGLY BUT VARIBLY INHIBITS BRAIN CYTOCHROME OXIDASE ACTIVITY IN RATS. A Cada and P Gonzalez-Lima. Department of Psychology, University of Texas at Austin, Austin, TX. Sponsor: W Stikker.

A COMPARATIVE STUDY OF A TYPICAL ANTIPSYCHOTIC DRUG HALOPERIDOL AND AN ATYPICAL ANTIPSYCHOTIC OLanzapine IN AMELIORATING OXIDATIVE STRESS. V Mahapatra and H P Misra. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.
DOSE DEPENDENT PROTECTION BY LIPICATE AGAINST CISPLATIN-INDUCED OTOTOXICITY IN RATS: ANTIOXIDANT DEFENSE SYSTEM. S M Somani¹, K Husain¹, C Whitworth² and L P Rybak². Departments of ¹Pharmacology and ²Surgery, Southern Illinois University, School of Medicine, Springfield, IL.

EXAMINATION OF HYDROGEN PEROXIDE FORMATION IN COCHLEAR OUTER HAIR CELLS AND SUPPORT CELLS USING 2'-7'DICHLOOROFLOURESCIN DIACETATE. W J Cleierci¹, L Yang¹ and R R Hicks². Departments of ¹Surgery and ²Clinical Sciences, University of Kentucky College of Medicine, Lexington, KY.

EXAMINATION OF THE ANTIOXIDANT PROPERTIES OF TEA IN SMOKERS AND NONSMokers. Y Xu, L M Kamendulis, C Han, J Chen, C M Heiser, M Gordon, E R Mohler and J E Klausig. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.


DOSE DEPENDENT PROTECTION BY LIPICATE AGAINST CISPLATIN-INDUCED NEPHROTOXICITY IN RATS: ANTIOXIDANT DEFENSE SYSTEM. K Husain¹, C Whitworth², L P Rybak² and S M Somani¹. Departments of ¹Pharmacology and ²Surgery, Southern Illinois University, School of Medicine, Springfield, IL.

THE ROLE OF PIREFENIDONE IN SCAVENGING HYDROXYL RADICALS. H P Misra and C L Rabideau. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

TOTAL OXIDANT SCAVENGING CAPACITY OF ANTIOXIDANTS TOWARD PEROXYNITRITE AND HYDROXYL AND PEROXYL RADICALS. F Regoli¹ and G W Winston². ¹Istituto di Biologia e Genetica, Universita di Ancona, Ancona, Italy; ²Department of Toxicology, North Carolina State University, Raleigh, NC.

EFFECT OF ENCAPSULATED SUPEROXIDE DISMUTASE (SOD) AND NITRIC OXIDE SYNTHASE (NOS) INHIBITORS ON ACETAMINOPHEN HEPATOTOXICITY IN MICE. J A Hisson, S L Pike, N R Pumford, M R Niesman and P R Mayes. University of Arkansas for Medical Sciences, Little Rock, AR.

PEROXYNITRITE SCAVENGING ACTIVITY OF NITRIC OXIDE SYNTHASE (NOS) INHIBITORS. L M Walker and P R Mayes. University of Arkansas for Medical Sciences, Little Rock, AR.

INACTIVATION AND HEME ALTERATION OF RECOMBINANT NEURONAL NITRIC OXIDE SYNTHASE BY GUANABENZ. S Jianmoungkol, D Demady and Y Ootwa. Department of Pharmacology, The University of Michigan, Ann Arbor, MI.

INDUCIBLE NITRIC OXIDE SYNTHASE KNOCKOUT MICE ARE LESS SUSCEPTIBLE TO THE TOXIC EFFECTS OF ACETAMINOPHEN THAN WILD TYPE MICE. S L Pike, N R Pumford, P R Mayes and J A Hisson. University of Arkansas for Medical Sciences, Little Rock, AR.

MICE LACKING INDUCIBLE NITRIC OXIDE SYNTHASE ARE PROTECTED FROM OZONE-INDUCED LUNG INJURY. I Fakhrazadeh, J D Laskin and D L Laskin. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

KINETICS OF NITRIC OXIDE INHIBITION IN SINGLE CELLS MEASURED USING A SELF-REFERENCING NITRIC OXIDE SENSOR. B Billack¹, J D Laskin², D M Porterfield³, P J Smith¹, R P Malchow¹ and D E Heck¹. ¹Rutgers University and ²UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ; ³Marine Biological Laboratory, Woods Hole, MA; ⁴University of Illinois, Chicago, IL.

ELUCIDATION OF SUPEROXIDE DISMUTASE (SOD) COPPER LOADING WITH LYS7 FROM S. CEREVISIAE. Pj Schmidt, J Strain, T Hamma and V C Culotta. Johns Hopkins University School of Public Health, Baltimore, MD.

HYPEROXIC LUNG INJURY IS POTENTIATED BY SPC-PROMOTOR DRIVEN EXPRESSION OF AN HO-1 TRANSGENE IN MICE. L K Rogers, D J Tom, K J McNaughton, R S Geske, F J DeMayo, S E Welty and C V Smith. Departments of Pediatrics and Cell Biology and CCM, Baylor College of Medicine, Houston, TX.
QUINOL-ThIOETHER-MEDIATED CYTOTOXICITY IN A RENAL PROXIMAL TUBULAR EPITHELIAL CELL LINE: EVIDENCE FOR MULTIPLE REACTIVE OXYGEN SPECIES. R E Maldve, T J Monks and S S Lau. Div of Pharm/Tox, College of Pharmacy. University of Texas at Austin, TX.

IMMUNODETECTION OF NAD(P)H:QUINONE OXIDOUREDUCTASE 1 (NQO1) IN HUMAN TISSUES. D Siegel and D Ross. Department of Pharmaceutical Sciences, School of Pharmacy, University of Colorado Health Sciences Center, Denver, CO.

PHARMACOLOGICAL RESCUE OF THE 14CoS/14CoS MOUSE AS A MODEL FOR ENDOGENOUS OXIDATIVE STRESS. M Z Dieter1, S Freshwater1, T P Dalton1, N L Childs1, M Grompe2, E A Lock3 and D W Nebert1. 1University of Cincinnati Medical Center, Cincinnati, OH; 2Oregon Health Sciences University, Portland, OR; 3Zenea Central Toxicology Laboratory, Macclesfield, Cheshire, UK.


HEPATOTUMORIGENESIS IN PCB-DOSED AND CONTROL SPRAGUE-DAWLEY RATS PARALLELS CYSTOSOLIC REDOX CYCLING ACTIVITY. J F Brown Jr., K M Fish, J B Silkworth and B A Mayes. General Electric Corporate Research and Development, Schenectady, NY.

CHARACTERIZATION OF NORMAL AND CIRRHOTIC FAT-STORING CELL ALCOHOL AND ALDEHYDE METABOLISM. J F Reichard and D R Petersen. School of Pharmacy, University of Colorado Health Sciences Center, Denver, CO.

PURIFICATION AND CHARACTERIZATION OF A MITOCHONDRIAL THYMINE GLYCOL ENDONUCLEASE FROM RAT LIVER. R H Stierum1, D L Croteau2 and V A Bohr. 1Laboratory of Molecular Genetics, National Institute on Aging, National Institutes of Health, Baltimore, MD; 2Department of Molecular and Cellular Biology, University of California at Berkeley, Berkeley, CA. Sponsor: J Yager.

EFFECTS OF N-TERT-BUTYL-α-PHENYL NITRONE (PBN) ON DIISOPROPYLPHOSPHOROFLUORIDATE (DFP) OR KAINIC ACID (KA) INDUCED SEIZURES, FASCICULATIONS AND MUSCLE NECROSIS. W-D Dettbarn1, D Milatovic1 and M Zivin2. 1Vanderbilt University, Department of Pharmacology and Neurology, Nashville, TN; 2University of Ljubljana, Ljubljana, Slovenia. Sponsor: R C Gupta.

ISOTOPIC DILUTION METHOD FOR THE IDENTIFICATION AND QUANTIFICATION OF 2-AMINO-6,8-HYDROXYPURINE (BohG). A Scott1, G Cosma1, C Jackson1, J Tessari1, B Cranmer1 and H Gardner2. 1Department of Env. Health, Colorado State University, Fort Collins, CO; 2US Army Center Environ Health Research, Ft. Detrick, MD.

CORRELATION BETWEEN THE FORMATION OF 8-HYDROXY-2-DEOXYGUANOSINE (8OHdG) AND MORPHOLOGICAL TRANSFORMATION IN SYRIAN HAMSTER EMBRYO (SHE) CELLS. H Zhang, Y Xu, L M Kamenudis and J E Klaunig. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

OXIDATIVE STRESS AND 8-HYDRODEOXYGUANOSINE IN RATS FOLLOWING ACUTE EXPOSURE TO TRICHLOROETHYLENE OR PERCHLOROETHYLENE. M Torasoo1, J Clark, D Dankovic, P Mathias, S Skaggs, C Walker and D Warren. CDC, NIOSH, Cincinnati, OH.

EFFECT OF SOY ISOFAVONE DIETARY SUPPLEMENTATION ON LEVELS OF OXIDATIVE DNA DAMAGE IN BLOOD OF WOMEN. Z Djuric, F Sarkar, J N Redd and O Kucuk. Karmanos Cancer Institute, Wayne State University, Detroit, MI.

OXIDATION OF LOW DENSITY LIPOPROTEIN BY HYDROGEN PEROXIDE-ALTERED MYOGLOBIN. J L Vuletic1, M Aviram2 and Y Osawa1. 1Department of Pharmacology, University of Michigan, Ann Arbor, MI; 2Lipid Research Laboratory, Rambam Medical Center, Israel Institute of Technology, Haifa, Israel.

H2O2 INDUCES HYPTERTROPHY AND APOPTOSIS IN RAT CARDIOMYOCYTES. C V Tu, J J Bahl, J P Liu, Y W Wu and Q M Chen. Department of Pharmacology, School of Medicine, University of Arizona, Tucson, AZ.
CARDIOSELECTIVE OXIDATION OF MITOCHONDRIAL DNA FOLLOWING SUBCHRONIC ADMINISTRATION OF DOXORUBICIN. J Serrano1, C M Palmeira2, D W Kuehl1 and K B Wallace3. 1Midcontinent Ecology Division, US EPA, Duluth, MN; 2Centro de Neurociencias, Department of Zoology, Universidade de Coimbra, Coimbra, PORTUGAL; 3Department of Biochemistry & Molecular Biology, University of Minnesota, Duluth, MN.

PYRIDOSTIGMINE AND EXERCISE INTERACTION ON CARDIAC ANTIOXIDANT DEFENSE SYSTEM IN MICE. R Jagannathan, K Husain, K S Reddy and S M Somani. Department of Pharmacology, Southern Illinois University School of Medicine, Springfield, IL.

COMBINATION OF PHENOLIC COMPOUNDS WITH ARACHIDONIC ACID INDUCES "FUTILE THIOL PUMPING" AND OXIDATIVE STRESS IN EPIDERMAL HUMAN KERATINOCYTES. A A Shvedova1, Y Y Tyurina2, V A Tyrin2, B Jeffries1, C Kommineni1, V Castranova1 and V E Kagan1,2,3. 1Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Morgantown, WV; 2Departments of Environmental and Occupational Health and 3Pharmacology, University of Pittsburgh, Pittsburgh, PA.

ROLE OF p53 TUMOR SUPPRESSOR GENE IN THE TOXICITY OF TCDD, ENDRIN, NAPHTHALENE AND CHROMIUM (VI) IN THE LIVER AND BRAIN TISSUES OF MICE. D Bagchi, J Balmoori, M Bagchi, X Ye, C B Williams and S J Starks. Creighton University Health Sciences Center, Omaha, NE.

AUTOFLOURESCENCE IN PRIMARY RAINBOW TROUT HEPATOCYTES INTERFERES WITH MEASUREMENT OF OXIDATIVE ACTIVITY VIA THE EXOGENOUS PROBE, DCF, BUT PROVIDES INTRINSIC MEASURE OF CELLULAR OXIDATIVE STATE. T R Henry, R D Johnson, D B Lothenbach and P K Schmiede. US EPA, NHEERL, Mid-Continent Ecology Division, Duluth, MN.

MAITOTOXIN-1 INDUCES LIVER AND PLASMA LIPID PEROXIDATION IN CF-1 MICE TREATED WITH SUBLETHAL ORAL DOSES. J Matta and M Milad. Department of Pharmacology & Toxicology, Ponce School of Medicine, Ponce, PR.

SHIFT IN FTIR (FOURIER TRANSFORM INFRARED) ABSORPTION SPECTRA OF AMIDE BOND-VIBRATION IN METHYL-CARBAMATE (METOMYL) EXPOSED RAT SPLEEN CELLS IS RELATED TO DISRUPTION OF CYTOSKELETON. T Suramana1, R Sindhuපak2, N Dusitin3, T Posayanonda3 and P Sinhaseni3. 1Department of Forensic Medicine, Faculty of Medicine; 2Institute of Health Research; 3Pesticide Safe Use Unit and Department of Pharmacology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand.

TUESDAY AFTERNOON, MARCH 16
130 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION, DISPOSITION/PHARMACOKINETICS

Chairpersons: Charles Timchalk, Pacific Northwest National Laboratory, Richland, WA and Keith W. Ward, SmithKline Beecham Pharmaceuticals, King of Prussia, PA

Displayed: 1:30 PM - 4:30 PM

Attendees: 1:30 PM - 3:00 PM

ORAL INGESTION OF TRICHLOROACETATE IN DRINKING WATER OF RATS AND MICE. J W Fisher1, D A Mahle2, T A Bausman1, S M Young1, G W Butler2 and J C Parker1. 1Air Force Research Laboratory, Human Effectiveness Directorate, WPAFB, OH; 2ManTech Environmental, Air Force Research Lab, Wright-Patterson AFB, OH; 3US EPA, Washington, DC.

SIMULATION OF TRICHLOROACETIC ACID KINETICS IN THE ISOLATED PERFUSED RAT LIVER USING A BIOLOGICALLY BASED KINETIC MODEL. C Tokoepa1 and J M Frazier2. 1Wright State University, Dayton, OH; 2Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH.

PHARMACOKINETICS AND METABOLISM OF DICHLOROACETATE (DCA) ADMINISTERED IN DRINKING WATER IN RATS AND MICE. D A Mahle1,2, J W Fisher1, A G Taylor1, R J Godfrey1,2, G W Butler1,2, L Narayanan1,2 and J C Parker1. 1Air Force Research Laboratory, Human Effectiveness Directorate, Wright-Patterson Air Force Base, OH; 2ManTech Environmental Technology, Inc., Wright-Patterson AFB, OH; 3GEO-Centers, Inc., Wright-Patterson AFB, OH; 4US EPA, NCEA/ORD, Washington, DC.
INHIBITION OF METABOLISM BY CHLORINATED AND BROMINATED DIHALOACETATES AND DIFFERENTIAL RECOVERY IN B6C3F1 MICE AND F344 RATS. A Gonzalez-Leon1, J L Merdink1, R J Bull2 and I R Schultz2. 1Pharm/Tox Program, Washington State University, Pullman, WA; 2Battelle PNNL, Richland, WA.

DOSE-DEPENDENT PHARMACOKINETICS OF MONOCHLOROAETIC ACID (MCA) IN ADULT MALE SPRAGUE-DAWLEY RATS. K Fried1, S A Saghiri1 and K K Rozman1,2. 1Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS; 2Section of Environmental Toxicology, GSF-Institut für Toxikologie, Neuherberg, Germany.

INFLUENCE OF ORAL ADMINISTRATION OF A QUATERNARY MIXTURE OF TRIBROMOTHIOANES ON THEIR BLOOD KINETICS IN THE RAT. M L da Silva, G Charast-Tardif, K Krisham and R Tardif. TOXHUM (Groupe de recherche en toxicologie humaine), Université de Montréal, Montréal, Québec, Canada.

IN VITRO METABOLISM OF DIAZEPAM BY HORSE LIVER SLICES. D F Gerken, R A Sams and M Sadler. College of Veterinary Medicine, The Ohio State University, Columbus, OH.

KINETICS OF BROMOSULFOPHTHALEIN CONJUGATION AND BILIARY EXCRETION AT VARYING ALBUMIN CONCENTRATIONS IN THE ISOLATED PERFUSED RAT LIVER. B D Foy1, C Toxopeus1 and J M Frazier2. 1Wright State University, Dayton, OH; 2Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH.


ABSENCE OF DIFFERENTIAL SENSITIVITY TO CHOLINESTERASE INHIBITION IN DEVELOPING RATS COMPARED TO DAMS TREATED FERINATALLY WITH CHLORPYRIFOS. J L Mattsson1, J P Maurissen2, R J Nolan1 and K A Brzak2. 1Dow AgroSciences, Indianapolis, IN; 2Dow Chemical Company, Midland, MI.

IN VIVO METABOLISM, ACETYLCHOLINESTERASE INHIBITION AND TOXICOKINETICS OF ALDICARB IN CHANNEL CATFISH (ICHTALURUS PUNCTATUS) E J Perkins and D Schlenk. Environmental Toxicology Research Program, Department of Pharmacology, University of Mississippi, University, MS.

PHARMACOKINETICS OF DANTROLENE IN THE HEN: FOR TREATMENT OF ORGANOPHOSPHORUS CHEMICAL EXPOSURE. K F Dockery, A W Dreisbach, J J Lertora and W J George. Tulane University School of Medicine, New Orleans, LA.


THE USE OF A VALIDATED METHOD FOR THE ANALYSIS OF 3,4,4',5-PENTA CHLOROBIPHENYL (PCB-126) IN PRELIMINARY TOXICOKINETIC RAT SAMPLES. B Burback1, J D Johnson1, C S Smith2, D Reicheiderfer3, B Harritos1, E Psurny1, K Carrico1 and S W Graves1. 1Battelle Memorial Institute, Columbus, OH; 2National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC. Sponsor: M R Hejmanek.

THE USE OF A VALIDATED METHOD FOR THE ANALYSIS OF 2,3,4,7,8-PENTA CHLORODIBENZOFURAN (PeCDF) IN PRELIMINARY TOXICOKINETIC RAT SAMPLES. E Psurny1, D Reicheiderfer3, B Burback1, J D Johnson1, C S Smith2, B Harritos1, K Carrico1 and S W Graves1. 1Battelle Memorial Institute, Columbus, OH; 2National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC. Sponsor: M R Hejmanek.

COMPARATIVE PHARMACOKINETICS OF SARAFLOXACIN IN RAINBOW TROUT AND CHANNEL CATFISH. G R Stehly, J R Meinertz and W H Gingerich. US Geological Survey, Upper Mississippi Science Center, La Crosse, WI.

CROSS-SPECIES PHARMACOKINETIC COMPARISON OF AN ICAM-1 ANTISENSE OLGONUCLEOTIDE, ISIS 2302, FROM MOUSE TO MAN. R S Geyar, R Yu, S P Henry and A A Levin. Isis Pharmaceuticals, Carlsbad, CA.

4-METHYLIMIDAZOLE TOXICOKINETIC STUDY USING F344 RATS AND B6C3F1 MICE. D L Reichelderfer1, J D Johnson1, D L Walters1, B L Burback1, A Zutshi1, S W Graves1 and C Smith2. 1Battelle Memorial Institute, Columbus, OH; 2NIEMS, Research Triangle Park, NC. Sponsor: M R Hejtmancik.

PLASMA PROTEIN BINDING OF 2,4-DICHLOROPHENOXYS-ACETIC ACID (2,4-D) AND 2-METHYL-4-CHLOROPHENOXACYETIC ACID (MCPA) IN THE DOG. J M Dickow1, D K Gerken1, R A Sams2 and S A Ashcraft2. 1The Ohio State University, Department of Veterinary Biosciences, Columbus, OH; 2The Ohio State University, Analytical Toxicology Laboratory, Columbus, OH.

MEASURING BIOAVAILABILITY OF DIESEL SOOT-ADSORBED BENZO(A)PYRENE IN DOGS FOLLOWING A SINGLE-BREATHE INHALATION EXPOSURE. P Gerde1,2, B A Muggenburg1 and A R Dahll. 1Loveland Respiratory Research Institute, Albuquerque, NM; 2Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; 3Battelle, Columbus, OH.

BUTADIENE RESOLVED CHIRAL EPOXIDES: REACTIONS WITH DNA. K K Divine1 and A R Dahll2. 1Loveland Respiratory Research Institute, Albuquerque, NM; 2Battelle, Columbus, OH.

COMPARATIVE DI-(2-ETHYLBENZYL)-PHTHALATE (DEHP) TOXICOKINETIC PROFILE IN FEMALE WISTAR RATS AND CD1 MICE. C Nativelle1, K Picard1, J-C Lhuiguenol1, N-C Chagnon1 and J-F Régnier2. 1ENSANA, Laboratoire de Toxicologie Alimentaire, Dijon, France; 2Elf-Atochem S.A., Département de Toxicologie Industrielle, Paris-la-Defense, France.

COMPARATIVE DI-(2-ETHYLHEXYL)-PHTHALATE (DEHP) TOXICOKINETIC PROFILE IN PREGNANT WISTAR RATS AND CD1 MICE. J-C Lhuiguenol1, C Nativelle1, K Picard1, M-C Chagnon1 and J-F Régnier2. 1ENSANA, Laboratoire de Toxicologie Alimentaire, Dijon, France; 2Elf-Atochem S.A., Département de Toxicologie Industrielle, Paris-la-Defense, France.

ELIMINATION AND DISTRIBUTION OF TETRYL FOLLOWING SUBCUTANEOUS ADMINISTRATION IN THE MALE SPRAGUE-DAWLEY RAT. J A Spinato and J R Myers. Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY.


TOXICOKINETICS OF FORMAMIDE IN RODENTS. E J Little1, R Moore1, R Harris1, T Morton1 and D Overstreet2. 1Midwest Research Institute, Kansas City, MO; 2National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: M L Cunningham.

BRANCHIAL ELIMINATION OF SUPERHYDROPHOBIC ORGANIC CHEMICALS BY FISH: DEPENDENCE ON CHEMICAL LOG Kow with J W Nichols, P N Fitzsimmons, J D Fernandez, A D Hoffman and B C Butterworth. US EPA, Mid-Continent Ecology Division, Duluth, MN.

DERMAL PHARMACOKINETICS OF METHYL-TERTIARY-BUTYL ETHER (MTBE) AND TERTIARY-BUTYL ALCOHOL (TBA) IN HUMAN VOLUNTEERS. J D Prakh1, D L Ashley2 and M W Case1. 1U S Environmental Protection Agency, NHEERL, Research Triangle Park, NC; 2Centers for Disease Control and Prevention, NCEE/EHLS, Atlanta, GA.

TOXICOKINETICS OF METHYL-TERTIARY-BUTYL ETHER INHALED ALONE AND IN COMBINATION WITH GASOLINE. J Benson, B Tibbetts and J Krone. Loveland Respiratory Research Institute, Albuquerque, NM.

STUDIES OF THE INTESTINAL PERMEABILITIES OF HYDROCARBONS IN THE RAT. K Rozett1, E C Lando2, P J Sinko3 and E Weyand1. 1Joint Graduate Program in Toxicology, Rutgers University/UMDNJ, Piscataway, NJ; 2Exxon Biomedical Sciences, Inc., East Millstone, NJ; 3Graduate Program in Pharmaceutical Sciences, Rutgers University, Piscataway, NJ.

KINETICS AND ORAL BIOAVAILABILITY OF FUMONISIN B2, M R Martinez-Larralaga, M L Fernández-Cruz, M A Martinez, M T Frejo, M Tafur, M Martinez, M J Diaz and A Anadón. Department of Toxicology, Institute of Pharmacology and Toxicology, CSIC, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.
TOXICOKINETICS OF CYHALOTHRIN IN THE RAT. A Anadon, M Martinez, M L Fernandez-Cruz, M A Martinez, M T Frejo, M Tafur, M J Diaz and M R Martinez-Larrañaga. Department of Toxicology, Institute of Pharmacology and Toxicology, CSIC, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

TOXICOKINETIC AND INDUCTION OF HEPATIC P450 1A1/1A2 ENZYME ACTIVITIES IN MALE RATS AFTER SINGLE S.C. DOSES OF 3,3',4,4'-TETRACHLOROBIPHENYL (PCB 77). A S Faqi1, B Heinrich-Hirsch2, W Mathar2 and I Chahoud1. 1Institut für Klinische Pharmakologie und Toxikologie, Freie Universität, Berlin, Germany; 2Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin, Berlin, Germany. Sponsor: R Stahmann.


INTRATRACHEAL INSTILLATION OF GANCICLOVIR AS AN ALTERNATIVE DRUG DELIVERY ROUTE. H J Kim1, T C Donaghey and J D Brain. Department of Environmental Health, Harvard School of Public Health, Boston, MA. 1Department Toxicology, Korea Food and Drug Administration, Seoul, Korea.

KINETICS OF ZICONOTIDE GIVEN INTRATHECALLY IN DOG. T L Yakes1, J Provencer1, A W de Kater2, R R Dean2, S Bowerson2. 1Anesthesiology, University of California, San Diego, CA; 2Elan Pharmaceuticals, Menlo Park, CA.

HEPATIC p-GLUTAMYL TRANSEPTIDASE-POSITIVE FOCI DEVELOPMENT IN RATS Co-TREATED WITH 17β-ESTRADIOL AND 2,3,7,8-TETRACHLOROBENZOP-4-DIOXIN. M E Wyde1,2, G W Lucier2, J Seely3 and N J Walker2. 1Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 2NIEHS, Research Triangle Park, NC; 3Pathco, Research Triangle Park, NC.

MECHANISM OF INHIBITION OF ESTROGEN-INDUCED GENE EXPRESSION BY TCDD. M Wormke and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

INHIBITION OF ESTROGEN-INDUCED RETINOIC ACID RECEPTOR α1 GENE EXPRESSION IN MCF-7 CELLS BY Ab RECEPTOR AGONISTS: MECHANISM OF Ab RECEPTOR-ESTROGEN RECEPTOR CROSS-TALK. G Sun1, Y Lu1 and S Safe1. 1Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX; 2Department of Biological Chemistry, Chicago Medical School, North Chicago, IL.

ESTROGEN AND ARLY HYDROCARBON RESPONSIVENESS OF ECC-1 ENDOMETRIAL CANCER CELLS IN CULTURE. E Castro-Rivera and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

INHIBITION OF E2-INDUCED e-fos PROTOONCOGENE EXPRESSION BY 2,3,7,8-TETRACHLOROBENZOP-4-DIOXIN (TCDD) IN MCF-7 HUMAN BREAST CANCER CELLS. R Duhan, W Porter, L-C Chen and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

IDENTIFICATION OF ESTROGEN-INDUCED GENES DOWNREGULATED BY 2,3,7,8-TETRACHLOROBENZOP-4-DIOXIN (TCDD) HYBRIDIZATION. L Chen and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

IN UTERO AND LACTATIONAL TCDD EXPOSURE ALTERS ESTROGEN INDUCED MAMMARY GLAND GROWTH IN THE RAT. P A Furr1, B Lewis1, A Lewis1, R Sommer, R E Peterson2 and J Flavio3. 1Institute of Human Virology, Medicine & Pharmacology, University Maryland Medical School, Baltimore, Maryland; 2School of Pharmacy, Environmental Toxicology Center, University Wisconsin, Madison, Wisconsin; 3Epidemiology & Prev Medical, University Maryland Medical School, Baltimore, MD.
APPARENT MODULATION OF PRENEOPLASTIC FOCI BY OVARIAN HORMONES IN RESPONSE TO TCDD. C Bishop-Robinson, T Nayyar and D B Hood. Department of Pharmacology, Meharry Medical College, Nashville, TN. Sponsor: N H Zawia.

EFFECT OF ESTROGEN AND DIOXIN ON IL-1B ACTIVITY. M F Ruh, Y Bi and C Bellone. Saint Louis University School of Medicine, St. Louis, MO.

BIOLOGICALLY BASED MODELING OF ALTERED HEPATIC FOCI AFTER TREATMENT WITH 2,4,5,3,4-PENTACHLOROBIPHENYL. M Haag-Grönlund1,2, R Conolly3, G Scheu1,3, L Wämgård1,3 and R Fransson-Steen3. 1Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 3Astra AB, Södertälje, Sweden.

2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN ALTERS CHICK EMBRYO CARDIAC ELECTRICAL CONDUCTION. M K Walker. College of Pharmacy, University of New Mexico, Albuquerque, NM.

COMPUTER-ASSISTED ANALYSIS OF EPIDIDYMAL SPERM MOTILITY OF RATS EXPOSED MATERNALLY TO 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD). J Yokomoto, S Ohsako, N Nishimura, C Tohyama and H Sone. Regional Environment Division, Environmental Health Sciences Division, National Institute of Environmental Studies, Tsukuba, Japan.

DOES VOLUME OF INJECTION MATTER WHEN CONCENTRATIONS ARE IDENTICAL? J C DeWitt, E B Meyer, and D S Henesh. School of Public and Environmental Affairs, Indiana University-Bloomington, Bloomington, IN.

PRENATAL TCDD EXPOSURE AND PREDISPOSITION TO MAMMARY CANCER IN RATS. J Wang, M C Brewer, W A Fritz and C A Lamartinière. Department of Pharmacology and Toxicology, University of Alabama at Birmingham, Birmingham, AL.

2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)-DEPENDENT ALTERATIONS IN B CELL LYMPHOPHOESIS ARE MEDIATED AT THE LYMPHOCYTE LEVEL DIRECTLY. A L Lavin and T A Gasielwitz. University of Rochester, Department of Environmental Medicine, Rochester, NY.

THE EFFECTS OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON INSULIN IN A MURINE MODEL OF TYPE II DIABETES. L T Blackwell1, L S Birnbaum2 and M J De Vivo. 1North Carolina Central University, Durham NC; 2NHEERL, US EPA, Research Triangle Park, NC.

ENDOCRINE FUNCTION OF MALE RATS EXPOSED MATERNALLY TO 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD). N Nishimura, S Ohsako, M Ishizuka, C Tohyama, H Sone and J Yokomoto. 1Environmental Health Sciences Division, 2Regional Environment Division, NIES, Tsukuba, Ibaraki, Japan.

HEPATIC EFFECTS OF PRENATAL AND POSTNATAL EXPOSURE TO AROCLORS® 1254 OR PCB 126. D G Ross, K M Crofton, P R S Kodavanti, D Rice, M J DeWitt. 1ETD and 2NIEHS, Research Triangle Park, NC; 3Health Canada, Ottawa, Ontario, Canada.

QUANTITATIVE ANALYSIS OF LYMPHOCYTE CYPIB1 EXPRESSION IN INDIVIDUALS OCCUPATIONALLY EXPOSED TO 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD). D L Spencer, V R Walker, J A Grassman, C R Miller, L Edler, D Jung, L L Needham, G W Lucier and S A Masten. 1NIEHS, Research Triangle Park, NC; 2University of Mainz, FRG; 3German Cancer Research Center, Heidelberg, FRG; 4CDC, Atlanta, GA.

ORAL TOXICITY OF 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN (HpCDD) OBEYS HABER’S RULE OF INHALATION TOXICITY. M Lebovsky1 and K K Rosman1,2. 1Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS; 2Section of Environmental Toxicology, GSF-Institut für Toxikologie, Neuherberg, Germany.

CONSTITUTIVE AND 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-INDUCED EXPRESSION OF CYPIA1 AND CYPIB1 IN HUMAN LYMPHOCYTES. V R Walker, D L Spencer, S A Masten, C R Miller, N J Walker, G W Lucier and J A Grassman. NIEHS, Research Triangle Park, NC.

EFFECTS OF TCDD ON MICE CHRONICALLY INFECTED WITH THE PROTOZOA PARASITE, TOXOPLASMA GONDII. M D King, M F Ehrich and D S Lindsay. Department of Biomedical Sciences and Pathobiology, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.
#1024 ROLE OF OXIDATIVE STRESS IN THE SUBCHRONIC TOXICITY OF TCDD IN C57BL/6J FEMALE MICE. L Tang1, N Z Alsharif1, E Hassoun2, C Pederson1 and M Shara1. 1Creighton University, School of Pharmacy and Allied Health Professions, Omaha, NE; 2Toledo University, School of Pharmacy, Toledo, OH.

#1025 ROLE OF OXIDATIVE STRESS IN THE CHRONIC TOXICITY OF TCDD IN C57BL/6J FEMALE MICE. N Z Alsharif1, L Tang1, E Hassoun2, T El-Metwally1, C Pederson1, M Shara1 and S J Stok1. 1Creighton University, School of Pharmacy and Allied Health Professions, Omaha, NE; 2Toledo University, School of Pharmacy, Toledo, OH.

#1026 VITAMIN SUPPLEMENTATION TO PREVENT DEVELOPMENTAL TOXICITY OF 2,3,7,8- TETRACHLORODIBENZO-P-DIOXIN (TCDD) IN TCDD-SENSITIVE RATS. H Huukkonen, R Purkunen, T Vartiainen and J Tuominen. National Public Health Institute, Division of Environmental Health, Kuopio, Finland.

#1027 TCDD INCREASES THE PRODUCTION OF VASOACTIVE EICOSANOIDS AND COFRACTIONATES WITH LIPOPROTEIN PARTICLES IN HYPERLIPIDEMIC MICE. T P Dalton, M Z Dieter, M Miller, R Yunker, M Carty, H Shorter, D W Nebert and A Pugs. University of Cincinnati Medical Center, Cincinnati, OH.

#1028 HISTOPATHOLOGICAL CHANGES FOLLOWING SUBCHRONIC AND CHRONIC EXPOSURE TO TCDD IN C57BL/6J FEMALE MICE. W J Hunter1, N Z Alsharif2 and L Tang2. 1Creighton University, School of Medicine and 2School of Pharmacy and Allied Health Professions, Omaha, NE.

#1029 COMPARISON OF BIOMARKER SENSITIVITY IN PREPUBESCENT FEMALE DEER MICE FOLLOWING EXPOSURE TO 2,3,7,8- TETRACHLORODIBENZO-P-DIOXIN. J Liu1, M M Peden-Adams1, A B Bodine1,2 and R L Dickerson1. 1Department of Environmental Toxicology, Clemson University, Pendleton, SC; 2Department of Animal and Veterinary Science, Clemson University, Pendleton, SC; 3The Institute of Environmental and Human Health, Texas Tech U/TTU Health Sciences Center, Lubbock, TX.

#1030 TOXICITY OF 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) UNDER CONDITIONS OF TOXICOKINETIC STEADY-STATE IN ADULT FEMALE SPRAGUE-DAWLEY RATS. S A Saghir1 and K K Rozman1,2. 1Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS; 2Section of Environmental Toxicology, GSF-Institut für Toxicologie, Neuherberg, Germany.

#1031 AN ALTERNATIVE MECHANISM FOR TCDD INDUCED NEUROTOXICITY. T Nayyar, N H Zawia and D B Hood. Department of Pharmacology, Meharry Medical College, Nashville, TN.


#1033 EXAMINATION OF GENE EXPRESSION IN CENTRIOLOBULAR AND PERIPORTAL CELLS AFTER TCDD EXPOSURE BY QUANTITATIVE RT-PCR. V M Richardson1, M J Santostefano2, N J Walker3, G W Lucier2 and L S Birnbaum1. 1US EPA, NHEERL/ETD, Research Triangle Park, NC; 2Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 3NEHS, Research Triangle Park, NC.

#1034 COMPARISONS OF RELATIVE POTENCIES (REPs) FOR EROD INDUCTION AND DECREASES IN SERUM THYROXINE FOR TCDD AND PCBs 77, 126 AND 118. M J DeVito1, D G Ross1, E S Craft2 and K M Croffon2. 1ETD & 2NIEHS, US EPA, Research Triangle Park, NC.

#1035 EFFECT OF IN VIVO TCDD EXPOSURE ON SECRETION OF ACTH AND CORTICOSTERONE BY PERFUSED PITUITARY AND ADRENAL GLANDS. J A Pitt1, A Buckalew2 and B D Abbott2. 1Curriculum in Toxicology, UNC, Chapel Hill, NC; 2DDB, RTD, NHEERL, US EPA, Research Triangle Park, NC.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION: BIOTRANSFORMATION

Chairpersons: Elizabeth Jeffery, University of Illinois, Urbana, IL
and Wolfgang DeKant, University of Wurzburg, Wurzburg, Germany
CHEMICAL INDUCTION OF RAT UDP-GLUCURONOSYL TRANSFERASE (UGT) mRNAs RESPONSIBLE FOR THYROID HORMONE METABOLISM. N R Vansell and C D Klaassen. University Kansas Medical Center, Kansas City, KS.

METABOLISM AND PHARMACOKINETICS OF IBUPROFEN IN THE CHIMPANZEE. R C Couch, J C Savage, T B Griffin and F Coulston. Coulston Foundation, White Sands Research Center, Alamogordo, NM.


DIVERSITY OF HEPATIC ARSENITE METHYLTRANSFERASE AND ARSENATE REDUCTASE ACTIVITIES AMONG NEW AND OLD WORLD PRIMATES: AN IN VITRO STUDY. E Wildfang, T R Radabaugh, R A Zakhrayen and H F Apostion. The University of Arizona, Tucson, AZ.

TERT-BUTYL HYDROPEROXIDE SUPPORTS LIPOXGENASE-MEDIATED XENOBIOTIC OXIDATION. T Hedeford, C G Hover and A P Kulkarni. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.

LIPOXGENASE-MEDIATED HYDROGEN PEROXIDE-DEPENDENT N-DEMETHYLATION OF XENOBIOTICS. C G Hover, J Ha, X Yang, A V Rajadhayaksha, V Reddy and A P Kulkarni. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.

IN VITRO BiotRANSFORMATION OF XANTHOUMOIL BY RAT LIVER MICROSONES. M Yilmez1, J F Stevens2, M L Deinzer2 and D R Buhrer1. 1Department of Environmental and Molecular Toxicology, 2Department of Chemistry, Oregon State University, Corvallis, OR.

THE IN VIVO DISPOSITION AND METABOLISM OF METHYLEUGENOL IN THE FISHER 344 RAT AND THE B6CF1 MOUSE. J L Burkey, N C Hoglen, M J Kattinig, M E Rice and I G Sipes. Department of Pharmacology and Toxicology, The University of Arizona, Tucson, AZ.

THE DISPOSITION OF ISOEUGENOL IN THE MALE FISHER 344 RAT. D A Badger, M J Kattinig, B L Smith, J Bao and I G Sipes. Department of Pharmacology and Toxicology, College of Pharmacy, The University of Arizona, Tucson, AZ.
METABOLISM OF STRUCTURAL ANALOGS OF EUGENOL BY PULMONARY CYTOCHROME P450 ENZYMES. K W Skordos and G S Yost. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

AFLATOXIN B1 OXIDATION BY HUMAN CYTOCHROMES P450 CYPIA1, 2A6, 2C8, 2C9, 2C18 AND 2C19. T K Bammier1, S J Thompson2, E P Gallagher3, C Sengstag4, D H Stonel, R L Haining1, A E Rettie2 and D L Eaton1. 1Department of Environmental Health and 2Department of Medicinal Chemistry, University of Washington, Seattle, WA; 3Department of Physiological Sciences, University of Florida, Gainesville, FL; 4Institute of Toxicology, Swiss Federal Institute of Technology, Schwerzenbach, Switzerland.

MICROSOMAL EPoxide HYDROLASE IS ASSOCIATED WITH, BUT NOT NECESSARY FOR, VITAMIN K1 EPoxide REDUCTASE ACTIVITY. D Cui1, R Wallin2 and T M Guenethner1. 1Department of Pharmacology, University of Illinois at Chicago, College of Medicine, Chicago, IL; 2Department of Medicine, Section on Rheumatology, The Bowman Gray School of Medicine, Winston-Salem, NC. Sponsor: B S Levine.

SELECTIVE HYDROLYSIS OF FATTY ACID MONOEPoXIDES INTO TOXIC VICINAL DIOLS BY SOLUBLE EPoxide HYDROLASE. K C Williamson, J F Greene and B D Hammock. University of California at Davis, Davis, CA.


METABOLISM OF BUTADIENE MONOEPoxide BY FREELY ISOlated HEPATOCYTES FROM MICE AND RATS. R A Kemper and A A Elfarra. Department of Comparative Biosciences and Center for Environmental Toxicology, University of Wisconsin, Madison, WI.

INTERRELATIONSHIPS AMONG FATTY ACID ETHYL AND METHYL ESTER SYNTHASES AND FATTY ACID ANILIDE SYNTHASE IN HEPG2 AND AR42J CELLS. B S Kaphalia1, S M Green2 and G A S Ansari1. Departments of 1Pathology and 2Pharmacology & Toxicology, University of Texas Medical Branch, Galveston, TX.

IN VITRO RATES OF COUMARIN 3,4-EPOXIDATION ARE NOT PREDICTIVE OF SPECIES DIFFERENCES IN HEPATO-TOXICITY. S L Born and L D Lehman-McKeeman. The Procter and Gamble Company, Cincinnati, OH.


INHIBITION OF MICROSOMAL AND SOLUBLE EPoxide HYDROLASE BY METALS. A J Draper and B D Hammock. University of California, Davis, CA.

BIOTRANSFORMATION AND KINETICS OF EXCRETION OF Methyl tert-BUTYL ETHER IN RATS AND HUMANS. A Amberg, E Rosner and W Dekant. Institut für Toxikologie, Universität Würzburg, Würzburg, Germany.

TOXICOKINETICS AND URINARY METABOLITES IN HUMANS AFTER EXPOSURE TO 13C-LABELED Methyl tert-BUTYL ETHER. A Låf1, S Sumner2, A Nilsson1 and G Johann1,3. National Institute for Working Life, Solna, Sweden; 2CIIT, Research Triangle Park, NC; 3University Hospital, Uppsala, Sweden.

ACTIVATION OF RAT LIVER MICROSOMAL FLAVIN-CONTAINING MONOOXYGENASE BY DEPRENyl, AN INHIBITOR OF MONOAMINE OXIDASE B. W G Chung, S D Ryu, C S Park, K H Lee and Y N Cha. Department of Pharmacology and Medicinal Toxicology Research Center, College of Medicine, Inha University, Inchon, Korea.

N-DEMYETHYLATION OF CAFFEINE BY RECOMBINANT HUMAN FLAVIN-CONTAINING MONOOXYGENASES. Y N Cha, C S Park, K H Lee and W G Chung. Department of Pharmacology and Medicinal Toxicology Research Center, College of Medicine, Inha University, Inchon, Korea.

IDENTIFICATION OF A HUMAN LUNG FMO2 VARIANT. M-F Yueh, R N Hines1, S K Krueger and D E Williams. Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR and 1Department of Pharmacology, Wayne State University School of Medicine, Detroit, MI.

DIETARY INDOLE-3-CARBINOL (13C) AND 3',5'-DIINDOLYL-METHANE (DIM) INHIBIT FMO-MEDIATED TAMOxifen (TAM) N-OXIDATION IN THE RAT. S Kachamarti1, D M Stresser2, S S Deha1, D Kupfer2 and D E Williams1. 1Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR and 2Department of Pharmacology and Molecular Toxicology, University of Massachusetts Medical Center, Worcester, MA.
DEVELOPMENTAL AND BIOCHEMICAL CHARACTERIZATION OF HEPATIC AND SERUM A-ESTERASES IN THE RAT. T A Couch, H W Chambers and J E Chambers. Center for Environmental Health Sciences, Coll of Vet Medical and Department of Entomology, Miss State University, Miss State, MS.

PONI-KNOCKOUT MICE ARE HIGHLY SENSITIVE TO CHLORPYRIFOS-OXON AND DIAZOXON TOXICITY. W F Li, L G Costa, D M Shih, A J Lucas and C E Furlong. Departments of Environmental Health, Medicine and Genetics, University of Washington, Seattle, WA; Departments of Medicine, Microbiology and Molecular Genetics, University of California at Los Angeles, Los Angeles, CA.

EFFECTS OF TISSUE HOMOGENATE CONCENTRATION ON ORGANOPHOSPHATE OXON INHIBITION AND IC50 VALUES OF HEPATIC ALIESTERASES AND BRAIN ACETYLCHOLINESTERASE IN ADULT RATS. C G Duran and J E Chambers. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

KINETICS AND INDIVIDUAL VARIATION IN GSH CONJUGATION OF TRICHLOROETHYLENE (TCE) IN HUMAN LIVER AND KIDNEY. L H Lash, D A Putt, J C Parker and J C Lipscomb. Department of Pharmacology, Wayne State University School Medical., Detroit, MI.; NCEA, US EPA, Washington, DC; US Air Force, Air Force Research Laboratory, Toxicology Branch, Wright-Patterson Air Force Base, Oh.

GLUTATHIONE-DEPENDENT METABOLISM OF 3-(4-FLUOR-6-THIO)ACRYLIC ACID (FTA) TO THE CHEMOTHERAPEUTIC AGENT 6-MERCAPTOPURINE (6-MP). S Gunnarsdottir and A A Elfarra. Department of Comparative Biosciences and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

THE COUPLED REDUCTION OF p-NITROSOPHENOL WITH ETHANOL OXIDATION CATALYZED BY HORSE LIVER ALCOHOL DEHYDROGENASE: TOXICOLOGICAL IMPLICATIONS OF THE RECYCLING OF NAD+/NADH. Z Maskos and G W Winston. Department of Toxicology, North Carolina State University, Raleigh, NC.

IN VIVO MICRODIALYSIS IN A COMPARATIVE STUDY OF HEPATIC METABOLISM OF PHENOL IN THREE FISH SPECIES. L E Solem, R C Kolanczyk, P K Schmieder and J M McKim. US EPA (INRC), NHEERL, Mid-Continent Ecology Division, Duluth, MN.


IN VITRO SPECIES COMPARISON OF THE METABOLISM OF THE ANTITUMOR AGENT NSC 652287. M I Rivera, S F Stinson, K Dillahl, E A Saursville, M D Mitchell and J C Davila. National Cancer Institute-Frederick Cancer Research and Development Center, Frederick, MD; Monsanto Life Sciences, St. Louis, MO.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION: CARCINOGENESIS I
Chairpersons: Richard J. Brennan, Harvard School of Public Health, Boston, MA and Shana R. Dalton, North Carolina State University, Raleigh, NC
Displayed: 1:30 PM - 4:30 PM
Attended: 3:00 PM - 4:30 PM

THE MUTAGENIC DNA REPLICATION MACHINERY CONTRIBUTES TO THE GENOMIC INSTABILITY OF CANCER CELLS. J W Sekowski, S Han, L H Malkas, A-L Lu and R J Hickey. University of Maryland School of Medicine, Baltimore, MD. Sponsor: K Squibb.

DELAYED GENOMIC INSTABILITY INDUCED BY GAMMA IRRADIATION IN YEAST, MAMMALIAN CELLS AND IN VIVO IN THE MOUSE. R J Brennan, R Rugo, B Secretan and R H Schild. Department Cancer Cell Biology, Harvard School of Public Health, Boston, MA.

POLYCYCLIC AROMATIC HYDROCARBONS WITH BAY-LIKE REGIONS INHIBITED GAP JUNCTIONAL INTERCELLULAR COMMUNICATION AND INDUCED THE ACTIVATION OF MAPK. B L Upham, A M Rumml, M R Wilson and J E Troasko. Michigan State University, Department of Pediatrics and Human Development, East Lansing, MI.
#1081 CHARACTERIZATION OF SIGNAL CROSS-TALK BETWEEN THE PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR ALPHA AND SPHINGOMYELINASE PATHWAYS. P J Lapinskas, C Swanson, M Smith and J C Corton. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#1082 IMPACT OF PEROXISOME PROLIFERATORS ON LIVER PHOSPHOLIPID BIOSYNTHESIS. M Adinehzaheh1 and N V Reo1,2. 1Department of Biochem. & Mol. Biol., 2Department of Physics, Wright State University, Dayton, OH. Sponsor: J M Frazier.

#1083 TISSUE SPECIFIC EFFECTS OF ACRYLAMIDE (AMD) ON DNA SYNTHESIS IN MALE RATS. J K Kaster, M A Friedman, J Jiang, L M Kemendulis and J E Klaunig. Division of Toxicology, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1084 A POTENTIAL MECHANISM FOR 2-BUTOXYETHANOL (2-BE) INDUCED MOUSE LIVER NEOPLASIA. H Xue, L M Kemendulis and J E Klaunig. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1085 STRONG, TOXICITY ASSOCIATED, PROMOTION OF RAT URINARY BLADDER CARCINOMA BY 2-(N-2-PHENETHYL AND BENZYL ISOTHIOCYANATES. M Hirose1, M Sano2, K Ogawa2, S Sugii12, K Toyoda1, M Shibutani1 and T Shirai2. 1Division of Pathology, National Institute of Health Sciences, Tokyo, Japan; 2First Department of Pathology, Nagoya City University, Medical School, Nagoya, Japan.

#1086 EFFECTS OF DIMETHYLAERSONIC ACID (DMA) ON URINARY PARAMETERS AND BLADDER EPITHELIUM IN FEMALE F344 RATS. S M Cohen1, L L Arnold1, M K St. John1, M Cano1, M van Gemert2 and M Eldan3. 1Department of Pathology/Microbiology, University of Nebraska Medical Center, Omaha, NE; 2Charles, Conn & van Gemert, L.L.C., Charlotte Hall, MD; 3Luxembourg Industries (PAMOL) Ltd., Tel Aviv, Israel.

#1087 COMPARISON OF THE URINARY AND UROTHELIAL EFFECTS OF α-PHENYL-PHENOL (OPP) AND SODIUM OPP (Na-OPP) FED TO MALE F344 RATS. M K St John, M Cano, T Anderson, L L Arnold and S M Cohen. Department of Pathology/Microbiology, University of Nebraska Medical Center, Omaha, NE.

#1088 NON-ADDITIVE DNA-DAMAGING EFFECTS OF GENOTOXINS IN MIXTURE: 2. COVALENT BINDING TO DNA. M K Ross, B Said and R C Shank. University of California at Irvine, Irvine, CA.

#1089 THE EFFECTS OF IRON ON NUCLEAR CALCIUM AND DNA FRAGMENTATION IN ISOLATED RAT HEPATOCYTE. L M Milchak and J D Bricker. Duquesne University, Pittsburgh, PA.


#1091 MOLECULAR DOSIMETRY OF N2,3-ETHENOUGUANINE IN CONTROL AND VINYL CHLORIDE-EXPOSED RATS. E J Morinello, A J L Ham and J A Swenberg. University of North Carolina, Chapel Hill, NC.

#1092 QUANTITATIVE ANALYSIS OF DNA ADDUCTS AND ABASIC SITES INDUCED BY PENTACHLOROPHENOL-DERIVED QUINONE AND HYDOQUINONE IN CALF-THYMUS DNA. P H Lin, J Nakamura and J A Swenberg. Curriculum in Toxicology, Department of Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#1093 EKER RAT MODEL CHARACTERIZATION: THE RESPONSE TO GENOTOXIC CARCINOGENS FOLLOWING FOUR MONTHS OF DOSING A F Yousef1,1, L Dill Morton1, F L Fort1, T Goldsworthy2 and C W Walker3. 1TAP Holdings Inc., Deerfield, IL; 2ILS Research Laboratory Systems, Research Triangle Park, NC; and 3UTMDACC, Science Park, Smithville, TX.

#1094 BINUCLEATED OCTOPLOID HEPATOCYTES DISPLAY INCREASED SUSCEPTIBILITY TO DNA SYNTHESIS INDUCED BY NONGENOTOXIC CARCINOGENS. S C Hasmalk and R A Roberts. Zeneca Central Toxicology Laboratory, Macclesfield, UK. Sponsor: I Kimber.

#1095 THE PEROXISOME PROLIFERATOR RESPONSE ELEMENT (PPRE) UPSTREAM OF THE HUMAN ACYL COA GENE IS INACTIVE IN MOST INDIVIDUALS: SIGNIFICANCE FOR SPECIES DIFFERENCES IN RESPONSE TO PEROXISOME PROLIFERATORS. N J Woodyatt, K Lambe, K Myers and R A Roberts. Zeneca Central Toxicology Laboratory, Macclesfield, UK. Sponsor: I Kimber.

#1096 A STRATEGY FOR ASSOCIATING PEROXISOME PROLIFERATOR-INDUCED HEPATOCELLULAR CHANGES WITH PATTERNS OF GENE EXPRESSION. A J Stauber, S P Anderson, L Q Fan, R Conolly, J Preston and J C Corton. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
SEXUAL DIMORPHISM IN HEXACHLOROBENZENE (HCB)-INDUCED MODULATION OF INTERCELLULAR COMMUNICATION IN THE LIVER. M Charbonneau, R Abdalian and D Cyr. Human Health Research Center, INRS-Institut Armand-Frappier, Université du Québec, Pointe-Claire, Québec, Canada.

REVERSIBILITY OF PHENOBARBITAL AND DEHP-INDUCED INHIBITION OF GAP JUNCTION INTERCELLULAR COMMUNICATION (GJIC) AND INDUCTION OF DNA SYNTHESIS IN THE RAT. D C Ackley, J M Kamenudus, J S Isenberg, A W Linton, G Pugh Jr, J H Smith and J E Klaunig. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN; Exxon Biomedical Sciences, Inc., East Millstone, NJ.

DOSE-RESPONSE AND TIME COURSE STUDIES OF DEHP ON HEPATIC PEROXISOMAL ß-OXIDATION (PBOs), GAP JUNCTION INTERCELLULAR COMMUNICATION (GJIC) AND DNA SYNTHESIS IN THE RAT. L M Kamenudus, J S Isenberg, A W Linton, G Pugh Jr, J H Smith and J E Klaunig. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN; Exxon Biomedical Sciences, Inc., East Millstone, NJ.

SPECIES SPECIFICITY FOR HEPATIC EFFECTS OF DEHP ON GAP JUNCTION INTERCELLULAR COMMUNICATION (GJIC), DNA SYNTHESIS AND PEROXISOMAL ß-OXIDATION (PBOs). R H Mckee, A W Linton, L M Kamenudus, G Pugh Jr, J H Smith and J E Klaunig. Exxon Biomedical Sciences, Inc., East Millstone, NJ; Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

THE HEPATIC EFFECTS OF DI-ISONONYL PHTHALATE (DINP) AND RELATED ANALOGS IN RATS AND MICE. J H Smith, J S Isenberg, L M Kamenudus, G Pugh Jr, D C Ackley, A W Linton and J E Klaunig. Exxon Biomedical Sciences, Inc., East Millstone, NJ; Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

ABSENCE OF LIVER EFFECTS IN CYCLOMOLGUS MONKEYS TREATED WITH PEROXISOMAL PROLIFERATORS. G Pugh Jr, J S Isenberg, L M Kamenudus, J J Clare, W R Brown, A W Linton, D C Ackley, J H Smith and J E Klaunig. Exxon Biomedical Sciences, Inc., East Millstone, NJ; Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN; TPS, Mount Vernon, IN; Research Pathology Services, New Britain, PA.

INTERACTION OF CO-PLANAR AND NON-PLANAR PCBs IN PROMOTION OF ALTERED HEPATIC FOCI. C E Dean, Jr, S A Benjamin, L S Chubh, J D Tessari and R S H Yang. Center for Environmental Toxicology and Technology, Colorado State University, Fort Collins, CO.

METOLACHLOR, A NONGENOTOXIC R Rat Hepatocarcinogen, Induces Cytochrome P450 2B1/2B2 and Alters Thyroid Homeostasis. S R Dalton, R T Miller and S A Meyer. Department of Toxicology and College of Veterinary Medicine, North Carolina State University, Raleigh, NC.

MECHANISTIC STUDIES OF KOJIC ACID ON THYROID TUMOR PROMOTION ON ENHANCEMENT OF THYROID CARCINOGENESIS. T Tamura, K Mitsumori, H Onodera, N Fujimoto, K Yasuhara, K Takegawa and M Miwasa. Division of Pathology, National Institute of Health Sciences, Tokyo, Japan; Hiroshima University, Hiroshima-shi, Japan. Sponsor: T Shira.

PROMOTION ACTIVITY OF KOJIC ACID ON R AT THYROID CARCINOGENESIS AND ITS EFFECT ON THYROID HORMONES. H Onodera, K Mitsumori, M Takahashi, T Funakoshi, T Tamura, K Yasuhara, K Takegawa and M Miwasa. Division of Pathology, National Institute of Health Sciences, Tokyo, Japan; Department of Pathology, Sasaki Institute, Tokyo, Japan; Pharmacokinetics & Analysis Research, Yonchimoto Pharmaceutical Industries, Ltd., Fukuoka, Japan. Sponsor: T Shira.

COMPARATIVE 30-WEEK DERMAL TUMOR PROMOTION EVALUATION OF CIGARETTE SMOKE CONDENSATE FROM A REFERENCE CIGARETTE AND AN ECLIPSE PROTOTYPE (7826A) TEST CIGARETTE IN FEMALE SENCAR MICE. D R Mckee, A T Mosberg, J D deBethizy, K R Van Kampen. RJ Reynolds Tobacco Company, Winston- Salem, NC; The Van Kampen Group, Ogden, UT.

TUMOR PROMOTING ACTIVITIES OF XYLAZINE (XZ) AND ITS METABOLITE, 2,6-DIMETHYLAMINOLINE (DMA), IN A TWO-STAGE NASAL CARCINOGENICITY MODEL IN RATS INITIATED WITH N-BIS(2-HYDROXYPROPYL)NITROSAMINE (DHPN). T Kojutani1, K Mitsuami1, K Yashamai1, H Kobayashi2, H Onodera1, H Takagi1 and M Hirose1.

1Division of Pathology, National Institute of Health Sciences, Tokyo, Japan; 2Chemistry Division, Institute of Environmental Toxicology, Ibaraki, Japan. Sponsor: T Shirai.

MIREX SKIN TUMOR PROMOTION IN MALE MICE IS REGULATED BY ESTRADIOL. K L Porter, C L Robinette and R C Smart. Department of Toxicology, North Carolina State University, Raleigh, NC.

SIMULATION MODELING OF A MULTIDOSE, MULTITIME POINT STUDY TO TEST CLONAL GROWTH MODELS OF 2,3,7,8-TETRACHLOROBENZO-P-DIOXIN (TCDD) PROMOTION OF ALIRED HEPATIC FOCI IN THE RAT. J G Teegarden1, R B Conoly2, and H C Pito1. 1Environmental Toxicology Center and McArkle Laboratory, University of Wisconsin, Madison, WI; 2Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

CORN OIL RAPIDLY ACTIVATES NUCLEAR FACTOR KB (NF-kB) IN KUPFFER CELLS IN VIVO. I Rusyn1,2, L Cohn2, R Schoenhoen2, J A Swenber2,3 and R G Thurman1,2. 1Laboratory of Hepatology and Toxicology, Department of Pharmacology, 2Department of Toxicology and 3Department of Environmental Health Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

DEFICIENCY OF METALLOTHIONEIN PROMOTES SKIN CARCINOGENESIS CAUSED BY 7, 12 - DIMETHYLBENZ(A)ANTHRACENE. B Zhang, M Satoh, J S Suzuki, Noriko Nishimura and C Tokyama. Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Japan.

THE REGULATORY ROLE OF C-MYC ON TELOMERASE ACTIVITY J B Colerange. St John’s University, Jamaica, NY.

PHENOLPHTHALEIN METABOLITE INHIBITS CATECHOL-O-METHYLTRANSFERASE (COMT) MEDIATED METABOLISM OF CATECHOL ESTROGENS. L T Burks, C E Garner and H B Matthews. NIEHS, Research Triangle Park, NC.

UPREGULATION OF THE AH RECEPTOR IN HUMAN BREAST CARCINOMA CELL LINES IN DIRECT PROPORTION TO THEIR MALIGNANCY. S E Elton, W G R Angus and C R Jefferis. University of Wisconsin Medical School, Madison, WI.

EFFECTS OF BROMOTHANE (BE) ON THE ESTROGEN RECEPTOR (ER) AND PROLIFERATING CELL NUCLEAR ANTIGEN (PCNA) LABELING IN HUMAN MCF-7 CELLS. H He, A Yoshida and D Dixon. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

NEU ACTIVATION BY ORGANOCHLORINES (OCS) IS CORRELATED TO THEIR ESTROGENIC ACTIONS IN MCF-7 CELLS. M Hatakeyama and P Matusuma. Department of Environmental Toxicology, University of California, Davis, CA.

ESTRADIOL METABOLISM IN RAT STRAINS DIFFERING IN SUSCEPTIBILITY TO MAMMARY CARCINOGENESIS. A M Wilson, J K Padgett and G A Reed. Department of Pharmacology, Toxicology and Therapeutics and Kansas Cancer Institute, University of Kansas Medical Center, Kansas City, KS.

INDUCTION OF QUINONE REDUCTASE (QR) AND GLUTATHIONE S-TRANSFERASE (GST) BY GREEN TEA EPIGALLOATECHIN GALLATE AND QUERCETIN IN MCF-7 HUMAN BREAST CANCER CELLS. L G Valtero, Jr and L C Quattrochi. Department of Medicine, University of Colorado Health Sciences Center, Denver, CO.

PSP94 EXPRESSION IN PROSTATE CANCER PERSISTS AFTER ANDROGEN DEPRIVATION THERAPY. M Moussa1, Y Imasato1, J Xuan2, H Saka1 and J Chiu2. U.W.O Departments of 1Pathology & 2Surgery, London, Ontario, Canada and 3Nagasaki University, Department of Urology, Japan. Sponsor: M G Cherian.

PROSTATE CANCER RISK FACTORS IN AN AREA OF COAL, IRON AND STEEL INDUSTRIES. T H Reckwitz1, K Goika2, S Dickhut2, R Thier2, H Schulze1 and H M Bol1. 1Urological Department of the Municipal Hospital, Dortmund, Germany; 2Institute of Occupational Physiology at the University of Dortmund, Dortmund, Germany.
#1123 OCCUPATIONAL AND NON-OCCUPATIONAL RISK FACTORS IN BLADDER CANCER PATIENTS IN AN INDUSTRIALIZED AREA IN EASTERN GERMANY. K Golka¹, T Seidel¹, C Roetzel¹, F Geller¹, H M Bolt¹, G Staudt² and R Thier¹. ¹Institute of Occupational Physiology at the University of Dortmund, Dortmund, Germany, ²Department of Urology, Paul-Gerhard-Stiftung, Lutherstadt Wittenberg, Germany.

TUESDAY AFTERNOON, MARCH 16
1:30 PM - 4:30 PM
ERNST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: CELLULAR NEUROTOXICITY OF METALS


Displayed: 1:30 PM - 4:30 PM

Attended: 1:30 PM - 3:00 PM

#1124 DECREASE OF GLIAL FIBRILLARY ACIDIC PROTEIN IN RAT FRONTAL CORTEX FOLLOWING ALUMINUM TREATMENT. S X Guo-Ross¹, E Y Yang¹, T J Walsh² and S C Bondy³. ¹University of California, Irvine, CA; ²Rutgers University, New Brunswick, NJ.

#1125 TRIMETHYLAMINE ACTIVATES GLIA TO RELEASE TNF-α THROUGH REACTIVE OXYGEN SPECIES PRODUCTION. B Viviani, C L Galli and M Marinovich. Laboratory of Toxicology, Institute of Pharmacological Sciences, University of Milan, Milan, Italy.

#1126 CYTOKINE AND GROWTH FACTOR GENE EXPRESSION IN RESPONSE TO TRIMETHYL TIN (TMT)-INDUCED NEUROTOXICITY IN THE ADULT RAT HIPPOCAMPUS. A R Little and J P O'Callaghan. CDC-NIOSH, Morgantown, WV.

#1127 ORGAN DISTRIBUTION OF TIN AND TRACE ELEMENTS IN MICE GIVEN TRIMETHYLAMINE (TMT) – RELATION TO THE TMT TOXICITY. V Eby¹, D Kotysova¹, J Koutensky¹, V Mlickova¹, J L Borowitz² and G E Isom. ¹Department of Pharmacology and Toxicology, Charles University, Pilsen, Czech Republic; ²Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

#1128 MANGANESE (Ma) EXPOSURE PROMOTES CELLULAR OVERLOAD OF IRON (Fe) IN CULTURED NEURONAL AND NEUROGLIAL CELLS IN VITRO. Q Zhao, H Kim and W Zheng. Division of Environmental Health Sciences, School of Public Health, Columbia University, New York, NY.

#1129 MANGANESE (Mn)-INDUCED NEUROTOXICITY: IN VITRO INTERACTION WITH IRON (Fe). W Zheng¹, Q Zhao¹, H Kim¹, V Slavkovich¹, M Aschner² and JH Graziano¹, ². ¹Div of Env Health Sci, School of Public Health, ²Department of Pharmacol, College of Physicians and Surgeons, Columbia University, New York, NY; ³Department of PhysiolPharmacol, Wake Forest University School of Medical, Winston-Salem, NC.

#1130 MANGANESE TOXICITY IN CATECHOLAMINERGIC CELLS. D V Lewis, S G Mitchell, A H Stokes, S M Mockus, M Aschner and K E Vrana. Wake Forest University School of Medicine, Winston-Salem, NC.

#1131 METHYLMERCURY ALTERS GLUTAMINE SYNTHETASE PROTEIN LEVELS IN NEONATAL RAT CORTICAL ASTROCYTE CULTURES. J W Allen and M Aschner. Department of Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#1132 TRANSFECTION OF ASTROCYTES WITH METALLOTHIONEIN-I INCREASES THEIR RESISTANCE TO METHYLMERCURY-INDUCED CYTOTOXICITY. M Aschner, C P Yao, D R Conklin and J W Allen. Department of Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#1133 MEHG-INDUCED CHANGES IN MITOCHONDRIAL TRANSMEMBRANE POTENTIAL AND MITOCHONDRIAL MASS IN RAT EMBRYONIC CNS CELLS. S Lu, S Kirchner and E M Fausman. University of Washington, Seattle, WA.

#1134 PROTECTIVE EFFECT OF CYCLOSPORIN A ON METHYLMERCURY (MeHg)-INDUCED CELL DEATH IN CEREBELLAR GRANULE CELLS. B Maldonado, D M Autio, M S Marty and W D Atchison. Department Pharm. Tox., Mich. State University, East Lansing, MI.

#1135 EVIDENCE FOR INDUCTION OF THE MITOCHONDRIAL PERMABILITY TRANSITION PORE BY METHYLMERCURY (MeHg) IN RAT CEREBELLAR GRANULE CELLS. T. I. Stringfellow and W D Atchison. Department Pharm. and Tox., Mich. State University, East Lansing, MI.
EFFECTS OF METHYLMERCURY (MeHg) ON REGULATION OF INTRACELLULAR CALCIUM IN RAT CEREBELLAR NERVE TERMINALS. S B K Stoughton and W D Atchison, Department Pharm. Tox., Michigan State University, East Lansing, MI.

EVALUATION OF SENSORY EVOKED POTENTIALS IN LONG EVANS RATS GESTATIONALLY EXPOSED TO MERCURY (Hg) VAPOR. D W Herr, S M Chanda, E Graff, O Karca, R P Beiler and D J Morgan. 1NIEERL/NTD, US EPA, Research Triangle Park, NC, 2Laboratory of Toxicology, NIEHS, Research Triangle Park, NC, 3NCEA, US EPA, Washington, DC.

EFFECTS OF METHYLMERCURY CHLORIDE AND MERCURIC CHLORIDE ON NEURITE OUTGROWTH AND CELL VIABILITY IN PC-12 CELLS. D K Parran, W R Mundy and S Barone Jr. 1Curriculum in Toxicology, UNC, Chapel Hill, NC, 2Neurotoxicology Division, US EPA, Research Triangle Park, NC.

LEAD ENHANCES NGF-INDUCED NEURITE OUTGROWTH IN PC12 CELLS VIA ENHANCED MAP KINASE ACTIVATION. T M Williams, A M Niford, J T Neary and R R Reams. 1Florida A&M University, College of Pharmacy and Pharmaceutical Sciences, Tallahassee, FL; 2Veterans Affairs Medical Center, Miami, FL. Sponsor: M Kolta.

LEAD ACETATE MODULATES THE IN VITRO PRODUCTION OF NITRIC OXIDE BY C6 GLIAL CELLS. M A Mitchell, M Chen and A S Heilman. Florida A&M University College of Pharmacy and Pharmaceutical Sciences, Tallahassee, FL.

UPREGULATION OF TH MRNA EXPRESSION BY INORGANIC LEAD IN PC12 CELLS AND RAT LOCUS COERULEUS. X Tian, H Pan, X Sun and J B Suszkiew. Department of Molecular & Cellular Physiology, University of Cincinnati, Cincinnati, OH.

THE EFFECTS OF LOW LEVEL POSTWEANING LEAD EXPOSURE ON TYROSINE HYDROXYLASE. D J O'Mara, A W Tank and D A Cory-Slechta. Departments of 1Environmental Medicine and 2Pharmacology and Physiology, University of Rochester School of Medicine and Dentistry, Rochester, NY.

TIME COURSE AND REGIONAL SPECIFICITY OF LEAD-INDUCED ALTERATIONS IN DOPAMINE CONTENT. Y Gedeon and A L Jadhav, College of Pharmacy & Health Sciences, Texas Southern University, Houston, TX.

INHIBITION OF PKC ACTIVITY IN RATS EXPOSED TO SUB CHRONIC LOW LEVEL LEAD (Pb). G T Ramesh and A L Jadhav. College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX.

ROLE OF PROTEIN KINASE C ACTIVATION IN LEAD ACETATE-INDUCED DNA SYNTHESIS IN 132 IN1 HUMAN ASTROCYTOMA CELLS. H Lu, M Guzzetti and G Costa. Department of Environmental Health, University of Washington, Seattle, WA.

LEAD AFFECTS EXPRESSION OF ZIF268 IN RATS. K Kim, G Goldstein and J Bressler. Kennedy-Krieger Institute, Baltimore, MD.

THE DNA-BINDING CHARACTERISTICS OF A SYNTHETIC APO-ZINC FINGER PEPTIDE VERSUS A b55F1 PROTEIN IN THE PRESENCE OF VARIOUS DIVALENT METALS. M Razmiasfar and N H Zawia. Department of Pharmacology, Meeharry Medical College, Nashville, TN.

Pb-INDUCED CHANGES IN SPI FUNCTION INVOLVE PKC BUT NOT MAPK SIGNALING PATHWAYS. D S Atkin and N H Zawia. Department of Pharmacology, Meeharry Medical College, Nashville, TN.

Pb TOLERANCE IN C6 RAT GLIOMA CELLS. Y Qian, Y Zheng and E Tiffany-Castiglioni. Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.

SYNAPTOTAGMIN AND OTHER CL-DOMAIN PROTEINS BIND LEAD WITH HIGH AFFINITY. C M L Bouton and J Pevsner. Kennedy Krieger Institute and The Johns Hopkins University School of Medicine, Baltimore, MD. Sponsor: J Bressler.

REGION-SPECIFIC EFFECTS OF Pb** EXPOSURE ON CENTRAL CHOLINERGIC AND CATECHOLAMINERGIC PATHWAYS. H Bielarczyk, Y Morozov, M De and J B Suszkiew. Department of Molecular and Cellular Physiology, University of Cincinnati, College of Medicine, Cincinnati, OH.

LEAD NEUROTOXICITY IS ASSOCIATED WITH DNA FRAGMENTATION AND INCREASED BY GLUTAMATE. J Loikkanen, J Naarala and K Savolainen. 1 Department of Pharmacology and Toxicology, University of Kuopio, Kuopio, Finland; 2Department of Environmental Sciences, University of Kuopio, Kuopio, Finland; 3Finnish Institute of Occupational Health, Department of Occupational Hygiene and Toxicology, Helsinki, Finland.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#1153 NMDAR-2A SUBUNIT PROTEIN EXPRESSION IS REDUCED IN THE DEVELOPING RAT HIPPOCAMPUS BY EXPOSURE TO Pb⁺⁺. T R Guilarte and M K Niel. Department of Environmental Health Sciences, The Johns Hopkins University SHPH, Baltimore, MD.


#1155 ENHANCEMENT OF THE INHIBITORY POTENCY OF ZINC (Zn⁺⁺) FOR THE RAT NMDA RECEPTOR CHANNEL IN THE PRESENCE OF LEAD (Pb⁺⁺). S M Lasley¹, M C Green¹ and M E Gilbern². ¹University of Illinois College of Medicine, Peoria, IL; ²US EPA, NHEERL, Research Triangle Park, NC.

#1156 EXPRESSION OF THE NMDA1 mRNA AND ITS RELATIONSHIP TO SP1 DNA-BINDING IN THE RAT HIPPOCAMPUS FOLLOWING DEVELOPMENTAL LEAD EXPOSURE. M J Brydie, Z Cao, J G Townsend and N H Zawia. Departments of Pharmacology and Physiology, Meharry Medical College School, Nashville, TN.

#1157 EFFECT OF LEAD (Pb) ON TRANSTHYRETIN (TTR) AND THYRONIN IN HUMAN CEREBROSPINAL FLUID (CSF). O Cheung², Y M Lu³, G Y Lu¹ and W Zheng². ¹Department of Neurosurgery, Hangzhou First Hospital, Hangzhou, PRC; ²Div. of Environmental Health Sciences, Columbia University, New York, NY.

TUESDAY EVENING, MARCH 16
4:30 PM - 6:00 PM
ERNST N. MORIAL CONVENTION CENTER
ROOM 211

ANNUAL BUSINESS MEETING
Chaired By: Steven D. Cohen, SOT President

SOT Members Only.

Members are invited and encouraged to attend the business meeting. If you have long-range planning ideas that you would like added to the agenda, please send them to Shawn Lamb at SOT Headquarters. The agenda includes the presentation of the President's, Treasurer's and Secretary's reports to the membership. In addition, the Society's two, new Honorary Members, William O. Robertson and Takashi Sugimura, will be inducted.

TUESDAY EVENING, MARCH 16
6:00 PM - 7:30 PM
HILTON NEW ORLEANS RIVERSIDE HOTEL

SPECIALTY SECTION MEETINGS: FOOD SAFETY, IN VITRO, MOLECULAR BIOLOGY, REPRODUCTIVE AND DEVELOPMENTAL, AND COMPARATIVE AND VETERINARY

TUESDAY EVENING, MARCH 16
6:30 PM - 8:00 PM
HILTON NEW ORLEANS RIVERSIDE HOTEL

REGIONAL CHAPTER MEETINGS
(Confirm the exact times and locations of the Regional Chapter Meetings from the Annual Meeting Calendar.)
SOCIETY OF TOXICOLOGY
38th Annual Meeting

WEDNESDAY MORNING, MARCH 17
8:40 AM - 9:30 AM
ERNST N. MORAL CONVENTION CENTER
ROOMS R02-R03

SYMPOSIUM SESSION: THE ROLE OF QUINONES IN TOXICOLOGY

Sponsored By: The Carcinogenesis and Mechanisms Specialty Sections

Chairpersons: Judy L. Bolton, University of Illinois, Chicago, IL and Terrence J. Monks, University of Texas, Austin, TX

Quinones represent a class of toxicological intermediate which can create a variety of hazardous effects in vivo including, acute cytotoxicity, immunotoxicity, and carcinogenesis. The mechanisms by which quinones cause these effects can be quite complex. Quinones are Michael acceptors and cellular damage can occur through alkylation of crucial cellular proteins and/or DNA. Alternatively, quinones are highly redox active molecules which can redox cycle with their semiquinone radicals leading to formation of reactive oxygen species (ROS) including superoxide, hydrogen peroxide, and ultimately the hydroxyl radical. Production of ROS can cause severe oxidative stress within cells through the formation of oxidized cellular macromolecules including lipids, proteins, and DNA. Formation of oxidatively damaged bases such as 8-hydroxy-2-deoxyguanosine has been associated with aging and carcinogenesis. Further ROS can activate a number of signaling pathways including protein kinase C and RAS. This symposium will explore the varied cytotoxic effects of quinones using specific examples including quinones produced from benzene, polycyclic aromatic hydrocarbons, estrogens, and catecholamines. The numerous mechanisms of toxicity (i.e., alkylation versus oxidative stress) will be correlated with the known pathology of the parent compound(s).

#1163 8:30  THE ROLE OF QUINONES IN TOXICOLOGY. J L Bolton1 and T.J. Monks2. 1Department of Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago, Chicago, IL; 2University of Texas at Austin, College of Pharmacy, Austin, TX.

#1164 9:10  BENZENE QUINONES AND BONE MARROW TOXICITY AND CHEMOPREVENTION. M.A. Trush. Johns Hopkins University, Baltimore, MD.

#1165 9:40  QUINONES FROM PREMARIN® ESTROGENS: ROLE IN ESTROGEN CARCINOGENESIS. J L Bolton. Department of Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago, Chicago, IL.

#1166 10:10 QUINONE-TILOOTHER MEDIATED TOXICITIES. T. J. Monks and S. S. Lau. Division of Pharmacology & Toxicology, College of Pharmacy, University of Texas at Austin, TX.
SYMPOSIUM SESSION: BIOLOGIC MARKERS IN MOLECULAR EPIDEMIOLOGY

Sponsored By: The Molecular Biology and Occupational Health Specialty Sections and the Task Force to Improve Scientific Basis of Risk Assessment

Chairpersons: Regina M. Santella, Columbia University, New York, NY and D. Gayle DeBord, NIOSH, Cincinnati, OH

Although biomarkers have been used for some time in epidemiology, recent advances in molecular biologic techniques have made it possible to detect biologic changes at low levels of exposure. Biomarkers can be used to identify exposures, effects of those exposures, and populations that may be at increased risk. Measurement of DNA adducts from polycyclic aromatic hydrocarbons, aflatoxin, and alkylating agents have been used to monitor exposure to these agents in smokers, workers, and those with environmental exposure. Lipid peroxidation produces high levels of malondialdehyde-DNA adducts which are highly mutagenic. Oxidative DNA damage is also present at high levels. Thus, DNA damage from endogenous sources may be an important factor in tumor development. Data on the relationship between DNA damage (or protein damage as a surrogate) and risk for cancer have demonstrated that these assays can predict development of disease in populations exposed to aflatoxin. Genetic susceptibility factors related to ability to metabolize carcinogens influence DNA damage levels and cancer risk. Biomarkers of effect measure mutations (HPRT or glycerokinase A) or cytogenetic damage and are useful to help bridge the continuum of exposure to disease. Many of the biomarkers of exposure and early effects are reversible and can be used as tools to monitor reductions in workplace exposure or the efficacy of chemoprevention studies. The rapid expansion of large banks of stored blood samples will make possible nested case-control studies evaluating the relationship between biomarkers and disease risk and gene-environment interactions.

BIOLGIC MARKERS IN MOLECULAR EPIDEMIOLOGY: MEASURES OF EXPOSURE AND RISK FOR CANCER DEVELOPMENT. R M Santella1 and D G DeBord2. 1Columbia School of Public Health, New York, NY; 2National Institute for Occupational Safety and Health, Cincinnati, OH.

THE RELATIVE CONTRIBUTION OF EXOGENOUS AND ENDOGENOUS EXPOSURES OF HUMANS TO CARCINOGENS AS REFLECTED BY DNA AND PROTEIN DAMAGE. P B Farmer, Y Guichard, G D D Jones, E Martin, V I C Orefoi, R Singh, and D G Shuker. MRC Toxicology Unit and 2CMHT, University of Leicester, Leicester, UK.

APPROACHES TO THE ANALYSIS OF ENDOGENOUS DNA DAMAGE IN PEOPLE. I J Marnett and J P Plastaras. Department of Biochemistry, Center in Molecular Toxicology and the Vanderbilt Cancer Center, Vanderbilt University School of Medicine, Nashville, TN.

IMMUNOLOGIC METHODS FOR MEASURING DNA ADDUCTS: APPLICATIONS TO MOLECULAR EPIDEMIOLOGIC STUDIES. R M Santella, Division of Environmental Health Sciences, Columbia School of Public Health, New York, NY.

MOLECULAR MARKERS OF BIOLOGICAL EFFECT - USE AS MEASURES OF RETROSPECTIVE CUMULATIVE EXPOSURE AND AS PREDICTORS OF HUMAN HEALTH EFFECTS. W L Bigbee, Center for Environmental and Occupational Health and Toxicology, University of Pittsburgh, Pittsburgh, PA.

LINKING BIOMARKERS OF BIOLOGICALLY EFFECTIVE DOSE AND EARLY BIOLOGIC EFFECT TO DISEASE RISK IN EPIDEMIOLOGIC STUDIES. P A Schulte1 and N Rothman2. 1NIOSH-Taft Lab, Cincinnati, OH; 2Division of Cancer Epidemiology and Genetics, NCI, Bethesda, MD. Sponsor: R M Santella.

GENERAL DISCUSSION.

WORKSHOP SESSION: TOXICOLOGY FOR KIDS: A HOW-TO GUIDE FOR TOXICOLOGISTS

Sponsored By: The Education Committee and K-12 Subcommittee

Chairpersons: Garold S. Yost, University of Utah, Salt Lake City, UT and Charlene A. McQueen, University of Arizona, Tucson, AZ

SOT has recognized the importance of education in the science of toxicology for students in grades K-12. While many members of SOT are interested in becoming involved in K-12 education, there is much uncertainty in what to do and how to do it. The Education Committee and its K-12 Subcommittee are committed to activities that will enhance the efforts of SOT members in their efforts. Thus, the K-12 Subcommittee has enlisted the help of several...
prominent scientists and educators to provide a program focused on the practical aspects of outreach programs with kids. The purpose of the workshop is to give SOT members the philosophical approaches and specific educational tools that are effective in classroom presentations. Specific hands-on demonstrations of proven techniques will be provided at the workshop.

#1175 8:30 TOXICOLOGY FOR KIDS: A HOW-TO GUIDE FOR TOXICOLOGISTS. G S Yost1 and C A McQueen2. 1Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT; 2Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1176 8:40 TOXICOLOGY CAN TURN KIDS ON TO SCIENCE. N Biggart. Bonita Vista High School, El Cajon, CA. Sponsor: G S Yost.

#1177 9:10 TOXICOLOGISTS SELLING SCIENCE IN THE CLASSROOM? LESSONS FROM MARKETING. W T Klimecki. Motorola Inc., Corporate Research Labs, Tempe, AZ.

#1178 9:40 EXPERIENCES OF AAAS IN K-12 SCIENCE, MATHEMATICS and TECHNOLOGY EDUCATION. Y S George. American Association for the Advancement of Science, New York, NY. Sponsor: G S Yost.

#1179 10:10 OVERVIEW OF K-12 ENVIRONMENTAL HEALTH SCIENCE EDUCATION EFFORTS AT NIEHS. A Deary. NIEHS, Research Triangle Park, NC. Sponsor: G S Yost.

#1180 10:40 HANDS-ON DEMONSTRATIONS OF TOXICOLOGY MATERIALS. "Environmysteries" (Video), M Trush. Johns Hopkins University; "Toxicology Risk Assessment and Pollution" (Print), A Gutsch, Rutgers University; "Tox-in-a-Box" (Experiment), D Eaton, University of Washington; "Chemicals and Human Health" (Computer), J Norman, University of Arizona; and "Get the Lead Out" (Print), M Dereski, Wayne State University.

WEDNESDAY MORNING, MARCH 17
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R04-R05
WORKSHOP SESSION: THE IMMUNOTOXICOLOGY OF NOVEL THERAPEUTICS

Sponsored By: The Immunotoxicology Specialty Section

Chairpersons: Robert V. House, Covance Laboratories, Madison, WI and Kenneth L. Hastings, US FDA, Rockville, MD

The discipline of immunotoxicology is predicated on the assumption that alterations in immune function resulting from xenobiotic exposure—whether stimulatory or inhibitory—are potentially deleterious. Although this assumption was suitable chemicals and "traditional" drugs, novel therapeutic agents being developed which will necessitate revision of how immunotoxicology is defined. At least three properties of these agents must be considered when assessing potential immunotoxicity. First, many novel therapeutics are proteins or polypeptides, and the use of xenobiotic proteins (or even native proteins with minor chemical alterations) may result in the development of neutralizing antibodies. Second, although the putative pharmacologic mechanism of action of many of these drugs is highly specific, unanticipated toxicities have become evident. Such toxicities may result from exaggerated pharmacological activity, non-targeted immunotoxicity, or unrelated effects on systems other than the immune system. This is confounded by the fact that the physicochemical properties and mechanism of action of these novel agents are so disparate; thus, it becomes difficult if not impossible to elucidate an overall pattern of toxic activity. Third, and perhaps most important, many of these agents are intended to therapeutically modulate the immune response. This last point is critical, since it is important to distinguish between the desired pharmacological activity and undesired side-effects.

#1181 8:30 THE IMMUNOTOXICOLOGY OF NOVEL THERAPEUTICS. R V House1 and K L Hastings2. 1Covance Laboratories, Madison, WI; 2US FDA, Rockville, MD.

#1182 8:40 IMMUNOMODULATORY BIOLOGICS: DISTINGUISHING ACTIVITY FROM TOXICITY. J L Busse, Genentech, Inc., South San Francisco, CA.

#1183 9:10 TOXICITY OF THERAPEUTIC CYTOKINES: FROM ANIMAL DATA TO CLINICAL ADVERSE EFFECTS. J Descotes. Lyon Poison Center and ISERM U98-X, Claude Bernard University, Lyon, France.

#1184 9:40 MECHANISMS AND APPLICATIONS OF CpG DNA. A M Krieg. Veterans Affairs Medical Center and University of Iowa, Iowa City, IA. Sponsor: R V House.

#1185 10:10 IMMUNOMODULATION BY THE PROTEASE SAAQUINAVIR. K L White, Jr1 and D R Germaine2. 1MVC/VCU Richmond, VA; 2NIEHS, Research Triangle Park, NC.

#1186 10:40 TOXICITY OF THERAPEUTIC IMMUNOSUPPRESSANTS. K L Hastings. Division of Special Pathogens and Immunologic Drug Products, Center for Drug Evaluation and Research, US FDA, Rockville, MD.

11:10 GENERAL DISCUSSION.
WEDNESDAY MORNING, MARCH 17
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 207

PLATFORM SESSION: PESTICIDES

Chairpersons: Michael W. Gill, Toxicology/Regulatory Services, Inc., Charlottesville, VA and William F. Heydans, Monsanto Company, St. Louis, MO.

#1187 8:30 EVALUATION OF ADVERSE HEALTH EFFECTS FROM DOMESTIC METHYLPARATHION EXPOSURE. R D Cox, R L Galli, J C Kolb, F R Carlton and A M Houp. Section of Medical Toxicology, Department of Emergency Medicine, University of Mississippi Medical Center, Jackson, MS.

#1188 8:45 IMPACT OF DOMESTIC METHYLPARATHION EXPOSURE ON CHILDREN'S HEALTH. J C Kolb, R D Cox, R L Galli, F R Carlton and A M Houp. Section of Medical Toxicology, Department of Emergency Medicine, University of Mississippi Medical Center, Jackson, MS.

#1189 9:00 THE UTILITY OF PLASMA AND RBC CHOLESTERASE MEASUREMENTS IN THE EVALUATION OF CHRONIC ORGANOPHOSPHATE TOXICITY. R L Galli, R D Cox, J C Kolb, F R Carlton and A M Houp. Section of Medical Toxicology, Department of Emergency Medicine, University of Mississippi Medical Center, Jackson, MS.


#1191 9:30 EFFECTS OF A NOVEL ORGANOPHOSPHORUS INSECTICIDE ON DETOXIFYING ENZYMES OF RAT. M Mahabub, M K Siddiqui, M F Rahman and K Jamil. 1Toxicology Unit, Indian Institute of Chemical Technology, Hyderabad, AP, India; 2Analytical Toxicology Division, Industrial Toxicological Research Center, Lucknow, UP, India. Sponsor: S Husain.

#1192 9:45 CHEMICAL MIXTURES: ANTAGONISTIC INTERACTIONS OF CHLORPYRIFOS AND METHYL MERCURY. J A Stevens and W H Benson. Environmental and Community Health Research/RIPS, Department of Pharmacology, The University of Mississippi, University, MS.

#1193 10:00 DEVELOPMENTAL NEUROTOXICITY OF CHLORPYRIFOS: EFFECTS ON NUCLEAR TRANSCRIPTION FACTORS INVOLVED IN CELL DIFFERENTIATION. T L Crumpton, F J Seidler and T A Slotkin. Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#1194 10:15 EFFECTS OF NEONATAL CHLORPYRIFOS EXPOSURE ON THE DEVELOPMENT OF NEURONAL ACTIVITY. E Dam, S J Garcia, F J Seidler and T A Slotkin. Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

WEDNESDAY MORNING, MARCH 17
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 206

POSTER DISCUSSION SESSION, TRANSGENIC ANIMALS, CARCINOGENICITY TESTING AND MECHANISMS

Chairpersons: Lois D. Lehman-McKeeman, Procter & Gamble Company, Cincinnati, OH and Sylvia M. Forst, Boehringer Ingelheim Pharmaceuticals, Ridgefield, CT

Displayed: 8:30 AM - 11:30 AM
Discussed: 9:30 AM - 11:30 AM

#1195 INCREASED SPONTANEOUS LIVER TUMOR SUSCEPTIBILITY IN CYTOCHROME P450 2B1 (CYP2B1) TRANSGENIC MICE. L D Lehman-McKeeman, D Caudill, J D Vassallo and A S Fim. Procter and Gamble Company, Cincinnati, OH.


#1197 ASSESSMENT OF A RAPID CANCER BIOASSAY USING THE P53 DEFICIENT Tg.AC(−/−−Ha−ras) MOUSE MODEL. J E French, G Lacks, G Moser, T L Goldswothy, J W Spalding and R W Tennant. Niehs and ILS, Research Triangle Park, NC.
ANALYSIS OF THE MUTANT FREQUENCY OF NONRESPONDER TG.AC MICE. R H Cannon1, D B Dunson1, G Rao1, D Kantz2 and R W Tennant1.
1National Institutes of Environmental Health Sciences, Research Triangle Park, NC; 2Integrated Laboratory Systems, Research Triangle Park, NC.

DEVELOPMENT OF NON-ISOTOPIc DNA RFLP ANALYSIS FOR IDENTIFICATION OF NON-RESPONDER TG.AC MICE. G J Moser1, D C Kantz1, G Lacks1, R R Tice1, T L Goldsworthy1, G N Rao2, R W Tennant2, J W Spalding2 and R Cannon2. 1Police and 2NIH, Research Triangle Park, NC.

TRANSFORMATION-ASSOCIATED RECOMBINATION CLONING TO EVALUATE LCR INVOLVEMENT IN TG.AC TRANSGENE EXPRESSION. M C Humble1,2, N Kourprina2, V Larionov2, R W Tennant2 and R E Cannon2.
1Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC; 2National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: G L Erexson.


SIX MONTH ORAL GAVAGE AND DIET CARCINOGENICITY STUDY WITH PHENOLPHTHALEIN IN THE HETEROZYGOUS P53+/− MOUSE. S M Furst, K T Blanchard, P D Lilly, H E Holden, J H Stollitz, C Barthel and R E Stoll. Department Toxicology and Safety Assessment, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT.

GENETIC ANALYSES OF PHENOLPHTHALEIN-INDUCED THYMIC LYMPHOMAS FROM P53+/− MICE. J E Hulla1, J E French2 and J K Dunnick2. 1Department of Pharmacology and Toxicology, University of North Dakota School of Medicine and Health Sciences, Grand Forks, ND; 2National Institute of Environmental Health Sciences, Research Triangle Park, NC.

CORRELATION BETWEEN SUSCEPTIBILITY TO CHEMICALLY INDUCED CARCINOGENESIS AND CELL PROLIFERATION IN THE EARLY STAGE IN HETEROZYGOUS P53 DEFICIENT MICE. T Sukata1,2, K Ozaki1,2, S Yamamoto2, S Uwagawa1,2, H Wanibuchi2, Y Okuno1 and S Fukushiro2.
1Environmental Health Science Laboratory, Sumitomo Chemical Company, Ltd., Konohana-ku, Osaka, Japan; 2First Department of Pathology, Osaka City University, Abeno-ku, Osaka, Japan.

EVIDENCE FOR A CRITICAL PALINDROMIC ORIENTATION OF Transgene Promoter Sequence FOR Tumorigenic Responsiveness Among TG.AC TRANSGENIC MICE. K L Thompson1, B A Rosenthal1, R Pincuk1, K T Blanchard1, R E Stoll2 and F D Sistare1. 1Center for Drug Evaluation & Research, FDA, Laurel, MD; 2Boehringer Ingelheim Pharmaceuticals, Inc, Ridgefield, CT.

WEDNESDAY MORNING, MARCH 17
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER ROOM R01
POSTER DISCUSSION SESSION: TNF-α AND OTHER CYTOKINES AS MEDIATORS OF HEPATOTOXICITY
Chairpersons: Mark A. Cargnaglia, Eli Lilly and Company, Greenfield, IN and Michael J. Graziano, Parke-Davis Pharmaceutical Research, Ann Arbor, MI
Displayed: 8:30 AM - 11:30 AM
Discussed: 9:30 AM - 11:30 AM

ROLE OF TUMOR NECROSIS FACTOR α (TNFα) AND TNFα RECEPTOR 1 (TNFR1) IN SUPPRESSION OF HEPATOCYTE APOPTOSIS BY PEROXISOME PROLIFERATORs IN WILD TYPE AND PPARγ+ MICE. R A Roberts, N H James, D West and P R Holden. Zeneca Central Toxicology Laboratory, Alderley Park, Macclesfield, UK. Sponsor: I Kimbel

DIETHYLTHIOCARBAMATE (DDC) INCREASES SENSITIVITY OF KUPFFER CELLS TO LIPOPOLYSACCHARIDE (LPS). H Ishiyama, N C Hoglen and I G Siper. Department of Pharmacology and Toxicology, Center for Toxicology, The University of Arizona, Tucson, AZ.
#1208 COORDINATE REGULATION OF INDUCIBLE NITRIC OXIDE SYNTHASE AND CYCLOXYGENASE-2 EXPRESSION IN HEPATIC MACROPHAGES DURING ACUTE ENDOXOEMIA. N Ahmad and D L Laskin. Joint Grad. Program in Toxicology, Rutgers University, Piscataway, NJ.

#1209 POTENTIAL ROLES OF AP-1 AND NF-κB IN ITO CELLS DURING LIVER FIBROSIS. D R Petersen, J Lee and V Vasilious. Molecular Toxicology & Environmental Health Sciences, Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.

#1210 EFFECT OF ENDOTOXIN PRETREATMENT ON OXIDATIVE STRESS, COLLAGEN AND CYTOKINE SECRETION OF HEPATIC STELLATE CELLS EXPOSED TO ETHANOL AND ACETALDEHYDE. S C Quiroz1, L Bucio1, V Souza1, I P Olivares1, E González1, E Hernández1, F Vargas2, D Kershonovich3 and M C Guiterrez Ruiz3. 1Dpto. Ciencias de la Salud, Universidad Autónoma Metropolitana, Mexico; 2Dpto. Gastroenterologia, INNSZ, Mexico.

#1211 THE ROLE OF NUCLEAR FACTOR-KAPPA B IN CARBON TETRACHLORIDE INDUCED LIVER INJURY. H Chiu1, L A Morito1, D M Dambach2, S K Durham2, R Bravo2 and D L Laskin1. 1Rutgers University, Piscataway, NJ; 2Bristol-Myers Squibb Company, Piscataway, NJ.

#1212 DIPHENYLENEDIODONIUM, AN NADPH OXIDASE INHIBITOR, PREVENTS EARLY ALCOHOLIC LIVER INJURY BY CHRONIC INTRAGASTRIC ETHANOL EXPOSURE IN RATS. H Kono, I Rusyn and R G Thurman. Laboratory of Hepatobiology and Toxicology, Department of Pharmacology, University of North Carolina, Chapel Hill, NC.

#1213 COMPARATIVE HEPATIC EFFECTS OF DIFFERENT LIPOPOLYSACCHARIDES FOLLOWING REPEATED DOSING IN RATS. A Suganuma1, S Motooka1, S Hosokawa2 and W D Kems1. 1Eisai Research Institute of Boston, Inc., Andover, MA; 2Kawashima Drug Safety Research Department, Eisai Company, Ltd., Hashima-gun, Gifu, Japan.

#1214 ACUTE EXPOSURE TO DIMETHYL-NITROSAMINE RESULTS IN ALTERED HEPATIC EXPRESSION OF CYTOKINE- AND APOPTOTIC-ASSOCIATED GENES. T L Horn1,2, A Bhattacharjee2, L B Schook2,3 and M S Rutherford2. 1Toxicology Graduate Program and 2Department of Veterinary Pathobiology, University of Minnesota, St. Paul, MN.

#1215 INCREASED SENSITIVITY OF TUMOR NECROSIS FACTOR-α (TNF-α) KNOCKOUT MICE TO ACETAMINOPHEN (AA) IS MEDIATED BY NITRIC OXIDE (NO). D M Dambach1, C R Gardner1, H Chiu1, M W Marino2, S R Durham3 and D L Laskin1. 1Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; 2Memorial Sloan-Kettering Cancer Center, New York, NY; 3Bristol-Myers Squibb Pharmaceutical Research Institute, Princeton, NJ.

WEDNESDAY MORNING, MARCH 17
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM R09

POSTER DISCUSSION SESSION, AIRBORNE PARTICULATE MATTER: IN VIVO TOXICITY

Chairpersons: Kent Pinkerton, University of California, Davis, CA and Ian I. Gilmour, University of North Carolina, Research Triangle Park, NC

Displayed: 8:30 AM - 11:30 AM

Discussed: 9:30 AM - 11:30 AM

#1216 CARDIOPULMONARY TOXICITY OF INSTILLED NICKEL, VANADIUM AND IRON IN MONOCROTALINE-TREATED RATS. M J Campen1, K L Dreher2, D L Costa2 and W P Watkinson2. 1UNC School of Public Health/Curr. in Toxicology, Chapel Hill, NC; 2PTB, ETD, NHEERL, US EPA, Research Triangle Park, NC.

#1217 RESIDUAL OIL FLY ASH (ROFA) ENHANCES ALLERGIC AIRWAY RESPONSES TO HOUSE DUST MITE (HDM) VIA THE CYTOKINE UREGULATION. A L Lamberti, W Dong, M J K Selgrade and M I Gilmour. Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and NHEERL, US EPA, Research Triangle Park, NC.

#1218 EXPOSURE TO DIESEL EXHAUST PARTICLES (DEP) COMPROMISED THE PULMONARY CLEARANCE OF LISTERIA MONOCYTOGENES IN RATS. H-M Yang1, J M Antonini1, J Y C Ma1, M W Barger1, J K H Ma2 and V Castronovo1. 1HELD/NIOSH, 2School of Pharmacy, West Virginia University, Morgantown, WV.

#1219 ROLE OF ALVEOLAR MACROPHAGES (AM) IN PARTICLE-INDUCED INFLAMMATION: STUDIES IN AM-DEPLETED RATS. J Finkelstein1, A C P Elder2, N Corson2, R Gelein2, C Johnston1, P Mercier2 and G Oberhäuser1. 1University of Rochester Department of Pediatrics and 2Environmental Medicine, Rochester, NY.
PARTICULATE MATTER (PM) AS AN IMMUNOSUPPRESSIVE FACTOR THAT CAN EXACERBATE ONGOING PULMONARY INFECTIONS. J T Zelikoff, C Nadziejko, K Fang, T Gordon and M D Cohen. New York University School of Medicine, New York, NY.

RESIDUAL OIL FLY ASH (ROFA)-INDUCED PULMONARY INFLAMMATION AND MUCOUS CELL METAPLASIA IN RATS CORRELATES WITH LEACHABLE VANADIUM CONTENT. J A Hotchkiss, J Carter, C B Bennett, K E Driscoll and J R Harkema. 1Michigan State University, East Lansing, MI; 2Procter & Gamble Company, Miami Valley Labs, Cincinnati, OH.

RESIDUAL OIL ASHES WITH DIFFERING COMPOSITION ELICIT PRO-INFLAMMATORY CHEMOKINES IN THE LUNG AND HEART. R W Clarke, E Al-Mutairi, J Love, T Rice, J M Antonini, J D Paulauskas and J J Godleski. 1Harvard School of Public Health, Boston, MA; 2HELD/NIOSH, Morgantown, WV.

DISTRIBUTION OF RETAINED PARTICulate MATERIAL IN RAT AND HUMAN LUNGS. K J Nikula, V Vallyathan, F H Y Green and F F Hahn. 1Loveland Respiratory Research Institute, NM; 2National Institute of Occupational Safety and Health, Morgantown, WV; 3University of Calgary, Calgary, Alberta, Canada. Sponsor: J L Mauderly.

RESPONSE TO ULTRAFINE AND FINe PARTICLES IN THE LPS-PRIMED LUNG. G Oberdörster, A C P Elder, J Finkelnburg, N Corson, R Gelein and P Mercer. 1University of Rochester, Departments of Environmental Medicine and Pediatrics, Rochester, NY.

TISSUE INJURY INDUCED BY INHALED FINE PARTICULATE MATTER AND PEROXIDE IS ASSOCIATED WITH ALTERED OXIDATIVE METABOLISM IN ALVEOLAR MACROPHAGES. K A Hooper, T H Li, B Turpin and D L Laslin. Environmental and Occupational Health Sciences Institute, Rutgers University and UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

SPECIES DIFFERENCES IN THE PULMONARY RESPONSE TO PARTICLES. J M Carter, B W Howard, M P Purdon, S M Curry and K E Driscoll. Procter & Gamble Company, Cincinnati, OH.

WEDNESDAY MORNING, MARCH 17
9:30 AM - 12:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: ENVIRONMENTAL/ECOTOXICOLOGY

Chairpersons: Chris A. Pristas, University of Nevada, Reno, NV and Lisa I. N. Bradley, ENSR Consulting and Engineering, Acton, MA

Displayed: 9:30 AM - 12:30 PM

Attended: 9:30 AM - 11:00 AM

4-AMINOBIPHENYLN (4ABP) HEMOGLOBIN (Hb) ADDUCTS IN MATERNAL SMOKERS: ROLE OF PASSIVE SMOKE EXPOSURE ON THE FETUS. M P Ross and S R Myers. 1Department Pediatrics and 2Department Pharmacology and Toxicology, University of Louisville School of Medicine, Louisville, KY.

REGIONAL DIFFERENCES IN HEMOGLOBIN ADDUCTS FROM AROMATIC AMINES IN CHILDREN. E Richter, S Rösler, G Scherer, A Grüb, U Krämer and H Behrendt. 1Walther-Straub Institut für Pharmakologie und Toxikologie, Ludwig-Maximilians University, Munich, Germany; 2Analyticbiologisches Forschungslabor, Munich, Germany; 3Kinderklinik und Poliklinik, Technische Universität, Munich, Germany. Sponsor: R C Gupta.

TOXICITY OF DEGRADABLE CHAFF COUNTERMEASURES. C L Wilson. Naval Health Research Center Detachment (Toxicology), Wright-Patterson Air Force Base, OH.


NARCOSIS AND REACTIVITY: COMPARING TWO DIFFERENT MODES OF ACTION IN AQUATIC TOXICOLOGY. J Hermens and A Freidig, Research Institute for Toxicology, Utrecht University, Utrecht, The Netherlands. Sponsor: M van den Berg.

EFFECT OF ESTRADIOL AND CORTISOL ON Na+K+-ATPASE AND FLAVIN-CONTAINING MONOOXYGENASE IN EURYHALINE FISH. D Schlenk1, B K Larsen1, R Smith1, L Peters2, D R Livingstone2, E Deane3 and N Woo1. 1Environmental Toxicology Program/ECHP, University of Mississippi, MS; 2Plymouth Marine Laboratory, Plymouth, UK; 3Department of Biology, Chinese University of Hong Kong, China.

CHARACTERIZATION OF HYDROQUINONE AND CATECHOL FORMATION USING HEPATIC MICROSONES FROM THREE SPECIES OF FISH. R C Kolanycz, L E Solen1, P K Schmieder and J M McMinn. US EPA, (NRCC), NHEERL, Mid-Continent Ecology Division, Duluth, MN.

EFFECT OF β-NAPHTHAFLAVONE INDUCTION UPON 3,4,3'-A', TETRACHLOROBIPHENYL BIOAVAILABILITY IN IN SITU PREPARATIONS OF CHANNEL CATFISH. A M Doi1, Z Lou2, K M Kleinow1, M O James2, C S Venugopal1 and E Holmes1. 1Department of Physiology, Pharmacology and Toxicology, School of Veterinary Medicine, LSU, Baton Rouge, LA; 2Department of Medicinal Chemistry, University of Florida, Gainesville, FL.

MULTIGENERATION REPRODUCTIVE EFFECTS OF DI-n-BUTYL PHthalate IN JAPANESE MEDAKA (ORZIISI LATIPE). P J Payna, P E Thomas and K R Cooper. Joint Graduate Program in Toxicology, Rutgers-The State University of New Jersey, Piscataway, NJ.


FISH HEPATIC ENZYMES IN A TROPICAL LAGOON FROM PUERTO RICO. W F Ortiz2, J Ruiz1, B D Jimenez2. 1University of Puerto Rico, Medical Sciences Campus, School of Public Health, 2School of Medicine, Center for Environmental and Toxicological Research, San Juan, PR.


PHASE I AND II ENZYME AND ACTIVITY LEVELS IN THE GUMBOOT CHITON CRYPTOCHITON STELLERI FOLLOWING EXPOSURE TO A DIETARY BROMO-PHENOL, LANOSOL. B C DeBuss1, S S Chimote1, J M Rimoldi2 and D Schlenk1. 1Environmental Toxicology Research Program/ECHP, Department of Pharmacology, 2Department of Medicinal Chemistry, School of Pharmacy, University of Mississippi, University, MS.

TOXICITY STUDIES WITH POMACEA PALLUDOSA (APPLE SNAIL) AND CATHARANTHUS ROSEUS AXENIC PLANT ROOTS CONTAINING TRINITROTOLUENE. E D Lykissas, S V Kala1, C Frater1, M Neely1, J V Shanks2, J B Hughes and R F Turk3. 1Department of Pathology, Baylor College of Medicine, Houston, TX; 2Department of Environmental Sciences and Engineering, Rice University, Houston, TX; 3Center For Toxicology Services, Inc., Humble, TX.

TOXICITY STUDIES WITH POMACEA PALLUDOSA (APPLE SNAIL) AND MYRIOPHYLUM AQUATICUM CONTAINING TRINITROTOLUENE. E D Lykissas1, J D Smith1, C Frater1, M Neely1, J V Shanks2, J B Hughes3 and R F Turk3. 1Department of Pathology, Baylor College of Medicine, Houston, TX; 2Department of Environmental Sciences and Engineering, Rice University, Houston, TX; 3Center For Toxicology Services, Inc., Humble, TX.

BIOENERGETIC EFFECTS OF LOW-DOSE CYANIDE ON HOMING PIGEONS (COLUMBA LIVIA): A MODEL FOR MIGRATORY BIRD STUDIES. R D Cooper and C A Priftos. Department of Nutrition, Environmental Sciences and Health Program, University of Nevada, Reno, NV.

PHYTOTOXIC EFFECTS OF SHORT-TERM EXPOSURE TO RDX IN WILD/Cover PLANTS. L E Winfield1, C R Lee1, K W Johnson2 and D L Brandon1. 1US Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS; 2Acet Corporation, McLean, VA. Sponsor: W H Benson.
EFFECT OF MERCURY BODY BURDEN ON GENERAL AND REPRODUCTIVE HEALTH OF LARGEMOUTH BASS (MICROPTERUS SALMOIDES) FROM THREE LAKES IN NEW JERSEY. A S Friedmann\textsuperscript{1}, K Costain\textsuperscript{2}, D L MacLatchy\textsuperscript{2}, W Stanisly\textsuperscript{3} and E Washuta\textsuperscript{3}. \textsuperscript{1}Ogden Environmental and Energy Services, Westford, MA; \textsuperscript{2}Centre for Coastal Studies and Aquaculture, University of New Brunswick, Saint John, NB, Canada; \textsuperscript{3}State of New Jersey, Division of Fish, Game and Wildlife, Lebanon Fisheries Laboratory, Lebanon, NJ. Sponsor: B Magee.

GENE EXPRESSION AS A POTENTIAL BIOMARKER OF INORGANIC MERCURY EXPOSURE IN TERRESTRIAL ECOSYSTEMS. M R Garvy, M Vredevoogd and E M Faustman. Consortium for Risk Evaluation with Stakholder Participation and Department of Environmental Health, University of Washington, Seattle, WA.


HYPOXIA-LIKE EFFECTS OF NICKEL IN HUMAN CELLS. K Salnikow, T Kluz and M Costa. Nelson Institute of Environmental Medicine, New York University School of Medicine and NIEHS Center, New York, NY.


CADMIUM TOLERANCE IN PARASITE-SUSCEPTIBLE AND -RESISTANT STRAINS OF \textit{Biophalara glabrata}, AN INTERMEDIATE HOST FOR \textit{Schistosoma mansoni}. C J Salice and G Roerijadi. University of Maryland, Chesapeake Biological Laboratory, Solomons, MD.

PREVENTION OF MICROBIAL PROLIFERATION ON HEPA FILTERATION MATERIAL. M S Connor\textsuperscript{1}, P J Kostyniak\textsuperscript{1,2} and R F Giese\textsuperscript{3}. \textsuperscript{1}Department of Pharmacology and Toxicology, \textsuperscript{2}Department of Clinical Laboratory Sciences, \textsuperscript{3}Department of Geology, State University of New York at Buffalo, Buffalo, NY.

TOXICITY OF CHLOROACETIC ACID (MCA) IN RATS UNDER CONDITIONS OF TOXICOGENETIC steady-state APPEARS TO OCCUR ACCORDING TO HABER'S LAW OF INHALATION TOXICOLOGY. K K Rozman\textsuperscript{1,2} and S A Saghir\textsuperscript{1}. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS. Sponsor: Section of Environmental Toxicology, GSF-Institut für Toxikologie, Neuherberg, Germany.

WEDNESDAY MORNING, MARCH 17
9:30 AM - 12:30 PM
ERNST N. MORIAL CONVENTION CENTER EXHIBIT HALL A

POSTER SESSION: ENDOCRINE TOXICITY

Chairpersons: Barry W. Wilson, University of California, Davis, CA and Ann DePeyster, San Diego State University, San Diego, CA

Displayed: 9:30 AM - 12:30 PM

Attended: 11:00 AM - 12:30 PM

METHYL-\textit{t}-BUTYL ETHER (MTBE) EFFECTS ON PLASMA LUTEINIZING HORMONE (LH) IN GONADECTOMIZED MALE RATS. B S Allgaier and A de Peyster. Graduate School of Public Health, San Diego State University, San Diego, CA.

ACUTE TESTICULAR TOXICITY OF MTBE AND BREAKDOWN PRODUCTS IN LAB MICE. J E Billitt, B C Faulkner and B W Wilson. University of California, Davis, CA.

ALTERATIONS IN ENDOCRINE ACTIVITY IN MALE SPRAGUE-DAWLEY RATS FOLLOWING ORAL ADMINISTRATION OF METHYL-\textit{t}-BUTYL ETHER. T M Williams, R C Catley and S J Boghoff. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

USE OF URINE AND PLASMA GH ASSAYS TO ASSESS THE GH SECRETION PATTERN IN MONKEYS AFTER DOSEING WITH BIM 22041, A NEW PEPTIDIC hGRF RECEPTOR AGONIST. J J Legrand\textsuperscript{1}, C Pécheur\textsuperscript{2}, V Boulifard\textsuperscript{1}, B Keck\textsuperscript{3} and F Garnier\textsuperscript{1}. \textsuperscript{1}Institut Henri Beaufour, Les Ulis, France; \textsuperscript{2}Chrysalis Preclinical Services Europe, L'Arbresle, France; \textsuperscript{3}Ecole Nationale Vétérinaire de Lyon, France.
PERSISTENT INCREASE IN ADRENAL OUTPUT WITHOUT CONCURRENT GONADAL ALTERATIONS IN MALE RATS THREE DAYS FOLLOWING ACUTE D,L-FENFLURAMINE EXPOSURE. L L Morford, S L Inman-Wood, A E McCrea, C V Verhees and M T Williams. 1Children’s Hospital Research Foundation, Cincinnati, OH; 2Sinclair Community College, Dayton, OH.

EFFECTS OF SHORT-TERM IN VIVO EXPOSURES TO POLYBROMINATED DIPHENYL ETHERS ON THYROID HORMONES AND HEPATIC ENZYME ACTIVITIES IN WEANLING RATS. T Zhou, D G Ross, M J Devito and K M Crofton. 1Curriculum in Toxicology, UNC, Chapel Hill, NC; 2Experimental Toxicology, 3Neurotoxicology Divisions, NIEHR, US EPA, Research Triangle Park, NC.

THE RELATIVE CONTRIBUTIONS OF SYNTHESIS AND INACTIVATION TO THE LOWERING OF SERUM TESTOSTERONE LEVELS BY KETOCONAZOLE. V S Wilson and G A LeBlanc. North Carolina State University, Raleigh, NC.

INTERACTIVE EFFECTS OF DDE, DIELDRIN AND METHOXYCHLOR ON HORMONE SYNTHESIS IN BASS GONADAL CULTURES. C J Borgert, T S Gross, P D Guiney and T G Otismit. 1Applied Pharmacology and Toxicology, Inc., Alachua, FL; 2Department of Physiological Sciences, University of Florida, College of Veterinary Medicine, Gainesville, FL; 3USGS BRD Caribbean Science Center, Gainesville, FL; 4C Johnson & Son, Inc., Racine, WI.


INTERACTION OF POLYCYCLIC MUSKS WITH AMPHIBIAN AND FISH ESTROGEN RECEPTOR. Y Chou and D R Dietrich. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

p-TERT-OCTYLPHENOL AND/OR VINCLOZOLIN INDUCED-INTERSEX IN DEVELOPING MEDAKA (ORYZIAS LATIPES). C S Koger, S J Teh and D E Hinton. Department of Anatomy, Physiology and Cell Biology, School of Veterinary Medicine, University of California, Davis, CA.

#1265 CYANAZINE (CYN) AFFECTS NOREPINEPHRINE (NE) RELEASE IN PHEOCROMOCYTOMA (PC12) CELLS. P C Das, W K McElroy and R L Cooper. 1Curtin in Toxicology, UNC-CH, NC; 2Repro Toxic Div, NIEHR, US EPA, Research Triangle Park, NC. Sponsor: R J Kavlock.

ENDOMETRIOSIS IN RHEUSUS MONKEYS IS ASSOCIATED WITH ALTERED LIVER CYTOCHROME P450 ENZYME ACTIVITY IN RELATION TO SERUM ESTRADIOL AND PROGESTERONE LEVELS AND DIOXIN EXPOSURE. D P Bofinger, L-H Chi and J R Olson. State University of New York at Buffalo, Buffalo, NY.

EFFECT OF DIETARILY ADMINISTERED ENDOCRINE ACTIVE AGENTS ON HEPATIC CYTOCHROME P450 (CYP450) AND ESTROGEN RECEPTOR ALPHA (ERa) EXPRESSION IN MALE AND FEMALE RATS. E M Laurenzana, K B Delucia, C C Weis and L V Hardin and R Newbold. 1National Center for Toxicological Research, Jefferson, AR; 2NIEHS, Research Triangle Park, NC.

ESTROGEN-MEDIATED TRANSACTIVATION VIA ESTROGEN RECEPTOR (ER)-Sp1 INTERACTIONS: COMPARISON OF WILDTYPE AND MUTANT MOUSE ER. K Kim, M G Parker and S Safe. 1Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX; 2Molecular Endocrinology Laboratory, ICRF, London, UK.

WEDNESDAY MORNING, MARCH 17
9:30 AM - 12:30 PM
ERNST N. MORSAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: GENOMICS/GENE EXPRESSION

Chairpersons: Donald G. Robertson, Parke-Davis Pharmaceutical Research, Ann Arbor, MI and Jeffrey D. Laskin, Robert Wood Johnson Medical School, Piscataway, NJ.

Displayed: 9:30 AM - 12:30 PM

Attended: 9:30 AM - 11:00 AM

THE APPLICATION OF GENOMICS ARRAY TECHNOLOGY TO UNDERSTANDING TOXIC MECHANISMS: A CASE STUDY USING CARBON TETRACHLORIDE. W D Pennie, P R Holden, N James, A N Brooks, R A Roberts and I Kimber. ZENECA Central Toxicology Laboratory, Cheshire, UK.
#1270  GENE EXPRESSION PATTERNS AND OXIDANT DAMAGE. S L Trast1,2, H R Brown1, T R Fox1, K T Morgan1, G R Benavides1, R D Tyler1, B Gaskell1 and C W Qualls3. 1GlaxoWellcome, Inc., Research Triangle Park, NC; 2North Carolina State University, Raleigh, NC; 3Oklahoma State University, Stillwater, OK.

#1271  GENE EXPRESSION PATTERNS INDUCED IN HEP-G2 CELLS INDICATE THAT DNA DAMAGE MAY PLAY A MAJOR ROLE IN PARQUAT-INDUCED MITOTIC ARREST AND CELL DEATH. G Benavides1,2, T Fox1, R Tyler1, C Qualls1,3, T Kepler1,2, B Gaskell1, S Trasti1,2, C Merrill1,2, L Crosby1,4, R Reynolds1,2, R Brown1 and K Morgan1. 1GlaxoWellcome, Inc., Research Triangle Park, NC; 2North Carolina State University, Raleigh, NC; 3Oklahoma State University, Stillwater, OK; 4US EPA, Research Triangle Park, NC; 4Tech Specialists, Raleigh, NC.

#1272  THE USE OF GENOMICS TECHNOLOGY TO INVESTIGATE GENE EXPRESSION CHANGES INDUCED IN CULTURED CELLS IN THE PRESENCE OF XENOESTROGENS. A N Brooks and W D Pennie, Molecular Endocrinology and Neurobiology Group, ZENECA Central Toxicology Laboratory, Cheshire, UK. Sponsor: I Kimber.

#1273  DEVELOPMENT OF A TOXICOLOGICAL GENE ARRAY AND QUANTITATIVE ASPECTS OF THIS MICROARRAY TECHNOLOGY. M Bartosiewicz1, M Trounstine2, R Johnston1 and A Bucklin1. 1Department of Molecular Biosciences, School of Veterinary Medicine, University of California, Davis, CA; 2Molecular Dynamics, Sunnyvale, CA.

#1274  TOXICGENOMICS: TOXICANT IDENTIFICATION AND CLASSIFICATION USING cDNA MICROARRAY TECHNOLOGY. E F Nwokoyi1, A K Hayes1, M Bitter2, J Trent2, J C Barrett1 and C A Afshari1. 1Laboratory of Molecular Carcinogenesis, NIEHS, Research Triangle Park, NC; 2Laboratory of Cancer Genetics, NHGRI, Bethesda, MD.

#1275  USE OF A GENOMIC TECHNOLOGY FOR ASSESSMENT OF TOXICITY. M J Cunningham1, G Zweiger1, M Fumess2, S Braxton1, M Egerton1, J Seilhamer1 and D Bailey2. 1Incyte Pharmaceuticals, Inc., Palo Alto, CA; 2Incyte Europe Ltd., Cambridge, UK.

#1276  QUANTITATIVE ANALYSIS OF GENE EXPRESSION ARRAY DATA FROM TCDD TREATED MOUSE HEPATOMA CELLS. P M Saama1, M R Field2 and T R Zacharewski2. 1Department of Animal Science, 2Department of Biochemistry and National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#1277  DETERMINATION OF ACOX GENE EXPRESSION IN VITRO AND IN VIVO FOLLOWING TREATMENT WITH PEROXISOME PROLIFERATORS USING THE BRANCHED DNA TECHNIQUE. L Gunawardhana, M A Hemdel, R Jolly, R W Krasula and R G Ulrich. Abbott Laboratories, Abbott Park, IL.

#1278  GENE EXPRESSION CHANGES AS A MARKER FOR CISPLATIN INDUCED APOPTOTIC CELL DEATH IN RAT AND HUMAN LIVER SLICES. K Rose, K Dooling, A Pollack and A Vickers. Novartis Institute for Biomedical Research, East Hanover, NJ. Sponsor: D Lapadula.

#1279  PHENOTYPIC AND GENOTYPIC VARIATION IN SERUM LIPID PARAMETERS IN CYNOMOLGUS MONKEYS. D G Robertson, T S Gipson, W Tefera, S A Knight, J A Stevena, M R Biavvins and F A de la Iglesia. Department of Pathology and Experimental Toxicology, Parke-Davis Pharmaceutical Research, A Division of Warner Lambert Company, Ann Arbor, MI.

#1280  PEROXISOME PROLIFERATOR-INDUCED SIGNALING PATHWAY CHARACTERIZATION USING NULL MOUSE MODELS AND cDNA ARRAYS. J C Corton, A J Staub, S P Anderson, L Q Fan and R C Cattley. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#1281  IDENTIFICATION OF GENES DIFFERENTIALLY EXPRESSED IN BENZO[a]PYRENE TREATED VASCULAR SMOOTH MUSCLE CELLS: IMPLICATIONS IN Atherosclerosis. K P Lu and K S Ramos. Department of Physiology and Pharmacology and Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

#1282  CLONING AND CHARACTERIZATION OF GENES REGULATED BY QUINOL-ThIOETHER MEDIATED OXIDATIVE STRESS IN HL-60 CELLS. S Ramachandran, S S Lau and T J Monks. Division of Pharmacology and Toxicology, College of Pharmacy, University of Texas at Austin, Austin, TX.
#1283 ZEBRAFISH TRANSCRIPTION FACTORS ACTIVATE POLLUTION-INDUCIBLE RESPONSE ELEMENTS AND DRIVE REPORTER GENE EXPRESSION. M J Carvan, III, W A Solis and D W Neupert. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#1284 TOXICOLOGY IN SILICO: IN SEARCH OF TARGET GENES FOR THE NUCLEAR ARYL HYDROCARBON RECEPTOR COMPLEX. M R Fielden and T R Zacharewski. Department of Biochemistry and National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#1285 ROLE OF THE ARYL HYDROCARBON RECEPTOR AND P450 METABOLISM IN THE REDOX REGULATION OF C-Ha-rus BY BENZO[A]PYRENE IN VASCULAR SMOOTH MUSCLE CELLS. J K Kerezi and K S Ramos. Department of Veterinary Physiology and Pharmacology & Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

#1286 PROTEIN INTERACTIONS WITH THE ELECTROPHILE RESPONSE ELEMENT INDUCED BY BENZO[A]PYRENE AND RELATED OXIDANTS. M T Holderman, K P Miller and K S Ramos. Department of Veterinary Physiology and Pharmacology and Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

#1287 NEGATIVE REGULATION OF THE RAT GST-Ya GENE IN VASCULAR SMOOTH MUSCLE CELLS. Y-H Chen and K S Ramos. Department of Veterinary Physiology and Pharmacology & Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

#1288 TYROSINE KINASE INHIBITORS ACTIVATE THE ANTIOXIDANT/ELECTROPHILE RESPONSIVE ELEMENT IN NEUROBLASTOMA CELLS. J D Moehlenkamp, C A Waters and J A Johnson. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1289 IDENTIFICATION OF ANTIOXIDANT/ELECTROPHILE RESPONSIVE ELEMENT (ARE/EpRE)-DRIVEN GENES IN HUMAN NEUROBLASTOMA CELLS. N J Cherrington and J A Johnson. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1290 PI3-KINASE IS A CRITICAL ACTIVATOR OF THE ANTIOXIDANT/ELECTROPHILE RESPONSIVE ELEMENT. J M Hanson, W A Chu and J A Johnson. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1291 DIFFERENTIAL INDUCTION OF THE ANTIOXIDANT/ELECTROPHILE RESPONSIVE ELEMENT BY HEAVY METALS IN NEUROBLASTOMA CELLS. M R Lombeier, J D Moehlenkamp and J A Johnson. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1292 CADMIUM-MEDIATED ACTIVATION OF THE METAL RESPONSE ELEMENT IN HUMAN NEUROBLASTOMA LACKING FUNCTIONAL METAL RESPONSE ELEMENT-BINDING TRANSCRIPTION FACTOR-1. W A Chu1, J D Moehlenkamp1, D Bittel2, G K Andrews2 and J A Johnson1. 1Departments of Pharmacology, Toxicology and Therapeutics; 2Biochemistry and Molecular Biology, University of Kansas Medical Center, Kansas City, KS.

#1293 ESTROGEN CATECHOLS ACTIVATE THE ANTIOXIDANT/ELECTROPHILE RESPONSIVE ELEMENT IN IMR-32 HUMAN NEUROBLASTOMA CELLS. J K Padgett, J M Hanson and J A Johnson. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1294 MOLECULAR GENETIC ANALYSIS OF HORMONE RECEPTOR GENES FROM THE JAPANESE MEDAKA (ORYZIAS LATIPES). W C Colley and W H Benson. Environmental and Community Health Research/RIPE, School of Pharmacy, The University of Mississippi, University, MS.

#1295 REGULATION OF MOUSE MAJOR URINARY PROTEIN mRNA LEVELS IN C5786 MOUSE LIVER BY DI(2-ETHYLHEXYL) PHthalate AND FOOD RESTRICTION. X Ye and S S Gill. Environmental Toxicology Graduate Program, University of California, Riverside, CA.

#1296 EFFECT OF TRICHLOROETHYLENE AND CHLOROACETIC ACIDS ON THE METHYLATION OF THE GENES FOR C-JUN AND C-MYC IN LIVER AND TUMORS OF FEMALE B6C3F1 MICE. L Tao, M Xie, R Ge, P M Kramer and M A Pereira. Medical College of Ohio, Toledo, OH.
EFFECT OF TRICHLOROETHYLENE ON DNA METHYLATION AND THE EXPRESSION OF EARLY-INTERMEDIATE PROTO-ONCOGENES IN THE LIVER OF B6C3F1 MICE. R Ge, L Tao, M Xie, P M Kramer and M A Pereira. Medical College of Ohio, Toledo, OH.

GENE EXPRESSION ANALYSES IN UROEPITHELIAL CELLS FROM AN ARSENATE EXPOSED WORKER POPULATION. J W Yager1, S C Kirchner2,3, T J Kavanagh2,3 and E M Faustman2,3. 1Electric Power Research Institute, Palo Alto, CA; 2Department of Environmental Health and 3Consortium for Risk Evaluation with Stakeholder Participation, Seattle, WA.

NICKEL ENHANCES TELOMERIC SILENCING IN SACCHAROMYCES CEREVISIAE. L Broday, J Cai, W Peng and M Costa. Nelson Institute of Environmental Medicine, NYU Medical Center, Tuxedo, NY.


ALDEHYDE DEHYDROGENASES: A GROWING GENE SUPERFAMILY. T Ziegler and V Vasiliou. Molecular Toxicology & Environmental Health Sciences, Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.


MATERNAL EXPOSURE TO AROCLOR® 1254 IMPAIRS SPATIAL LEARNING AND MEMORY IN MALE OFFSPRING. C S Roegge1, J J Widholm1, B W Seco1, K M Crofton2 and S L Schantz1. 1Neuroscience Prog. & Department of Vet. Biosciences, University of Illinois, Urbana, IL; 2NHEERL NTD, US EPA, Research Triangle Park, NC.


NON-COPLANAR PCBs CAN DISCRIMINATE BETWEEN GENETIC ISOFORMS OF_MICROSOMAL IMMUNOPHILIN/ Ca2+ CHANNEL COMPLEXES. I N Passah1, L G Hansen2, T N Ta1, E Mai1 and P W Wong1. 1Department of Molecular Biosciences, School of Veterinary Medicine, University of California, Davis, CA; 2Veterinary Biosciences, University of Illinois, Urbana, IL.


DIFFERENTIAL EFFECTS OF AROCLOR® 1254 MIXTURES WITH TWO LOT NUMBERS: INTRACELLULAR CALCIUM BUFFERING AND PROTEIN KINASE C TRANSLLOCATION IN RAT BRAIN. P R S Kodavanti1, N Kannan2, N Yamashita2, T R Ward1, L S Burnbaum4 and H A Tilson1. 1Neurotoxicology and 4Experimental Toxicology Divisions, NIEERL/US EPA, Research Triangle Park, NC; 2Department of Marine Chemistry, University of Kiel, Kiel, Germany; 3National Institute for Resources and Environment, Hydrospheric Environmental Protection Department, Tsukuba, Japan.
DIFFERENTIAL EFFECTS OF AROCLOR® 1254 WITH TWO LOT NUMBERS: HEPATIC ENZYME INDUCTION AND CIRCULATING THYROID HORMONE LEVELS. D E Burgin, 1 J J Diliberto, 1 E C Der-Yellin, 2 L S Birnbaum, 2 and P R S Kodavanti, 1 1Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 2Experimental Toxicology and 2Neurotoxicology Divisions, NIEERL/US EPA, Research Triangle Park, NC.

PCB95 ALTERS METABOLISM IN PC12 CELLS WITHOUT DIRECTLY AFFECTING RESPIRATION IN ISOLATED RAT BRAIN MITOCHONDRIA. P W Wong-Yim, 1 E F Garcia, 1 and I N Pessah, 1 1Department of Molecular Biosciences, School of Veterinary Medicine, 2Department of Neurobiology Physiology and Behavior, University of California, Davis, CA.

INTERACTION AMONG SIGNAL TRANSDUCTION PATHWAYS IN ACTIVATION OF RAT NEUTROPHILS BY POLYCHLORINATED BIPHENYLS. J Olivero and P E G ante, 1 Department of Pharmacology and Toxicology, Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

ALTERATIONS IN INTRACELLULAR FREE CALCIUM CONCENTRATION INDUCED BY POLYCHLORINATED BIPHENYLS IN RAT NEUTROPHILS. P E G ante, 1 J Olivero and A Mahajerin, 1 Department of Pharmacology and Toxicology, Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

CYTOTOXICITY AND AROMATASE (CYP19) ACTIVITY MODULATION BY ORGANOCARBOXILINES IN HUMAN PLACENTAL JEG-3 AND JAR CHORIOCARCINOMA CELLS. R J Letcher, 1 I van Holstein, 2 R J Norstrom, 2 A Bergman, 2 R Peters, 1 and M van den Berg, 1 1Research Institute of Toxicology, Utrecht University, Utrecht, The Netherlands; 2Environment Canada, Canadian Wildlife Service, Hull, Quebec, Canada; 3Department of Environmental Chemistry, Stockholm University, Stockholm, Sweden.

DIFFERENTIAL EFFECTS OF PCB CONGENERS ON RAT THYROID FUNCTION. L A Martin and C D Klaassen, 1 University Kansas Medical Center, Kansas City, KS.

ALTERATIONS OF STEROID HORMONE METABOLISM IN JUVENILE CD-1 MICE BY PCB153. J S Gillette, 1 R L Rose and E Hodgson, 1 Department of Toxicology, North Carolina State University, Raleigh, NC.

ATHERMOL METABOLITES OF POLYCHLORINATED BIPHENYLS (PCBs) INHIBIT THE CATECHOL-O-METHYLTRANSFERASE-MEDIATED METABOLISM OF CATECHOL ESTROGENS. C E Garner, 1 L T Burke, 2 A E Etheridge, 2 and H B Matthews, 1 1NIEHS, Research Triangle Park, NC; 2RTI, Research Triangle Park, NC.

POLYCHLORINATED BIPHENYLS (PCBs) MEASURED IN A GRADE SCHOOL FOLLOWING A FLUORESCENT LIGHT BALLAST FAILURE. M J Fedoruk and B D Kerger, 1 University of California, Irvine, CA and Health Science Resource Integration, Inc., Tallahassee, FL.

90-DAY INHALATION TOXICITY OF 1,1,2-DIFLUORO-1,2,2-TRICHLOROETHANE (HCFC-122) IN RATS. A J O’Neill, R J Baric, N E Everds, R R Frame, J C O’Connor and W J Brock, 1 DuPont Company, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

IN VITRO METABOLISM OF BETA-CHLOROPRENE. M W Himmelestein, S C Carpenter and R Valentine, 1 DuPont Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

TOXICOKINETICS OF TRICHLOROETHYLENE (TCE) AND ITS METABOLITES IN THE BLOOD AND TISSUES OF RATS. J V Bruckner and S Muralidhara, 1 Department Pharmaceutical and Biomedical Sciences, College of Pharmacy, University of Georgia, Athens, GA.

MEASUREMENT OF TRICHLOROETHYLENE (TCE) AND ITS MAJOR METABOLITES IN BIOLOGICAL SAMPLES. S Muralidhara and J Bruckner, 1 Department of Pharmaceutical and Biomedical Sciences, College of Pharmacy, University of Georgia, Athens, GA.

THE IMPACT OF EXPERIMENTAL UNCERTAINTY AND INTERINDIVIDUAL VARIABILITY ON IN VITRO TO IN VIVO EXTRAPOLATION FOR TRICHLOROETHYLENE METABOLISM IN HUMANS. J Z Byczkowski, 1 J C Lipson, 2 1TN & Associates, Inc., Cincinnati, OH; 2US EPA National Center for Environmental Assessment, Cincinnati, OH.

EXTENT AND TIMELINESS OF TISSUE REPAIR MODULATES THE DOSE-RELATED INCREASE IN TOXICITY OF CHLOROFORM. M G Soni, 1 S K Ramaiah, 1 M M Muntaz, 1 M Clewell, 1 and H M Mehendale, 1 1Division of Toxicology, College of Pharmacy, Northeast Louisiana University Health Sciences Center, Monroe, LA; 2ATSDR, Department of Health and Human Services, Atlanta, GA; 3ICF Kaiser Engineers Inc., Ruston, LA.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#1324 VEHICLE, VOLUME AND TIME DEPENDENT EFFECTS OF CHLOROFORM (CHCl₃) INDUCED HEPATOTOXICITY. Y M Seo, A McDonald and J E Simmons. NHEERL, US EPA, Research Triangle Park, NC.

#1325 FURTHER REFINEMENT OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC/PHARMACODYNAMIC MODEL FOR THE TOXICLOGIC INTERACTION BETWEEN KEPONE AND CARBON TETRACHLORIDE. R S H Yang, L Feng and S A Benjamin. Center for Environmental Toxicology and Technology, Department of Environmental Health, Colorado State University, Fort Collins, CO.

#1326 OLDER RATS ARE RESILIENT TO THE HEPATOTOXICITY OF CC₄ AND CHLORDECON. H M Mehdendale, S K Ramaiah, A Dalvi and M G Soni. Division of Toxicology, College of Pharmacy, Northeast Louisiana University Health Sciences Center, Monroe, LA; 2National Center for Toxicological Research, Jefferson, AR.

#1327 ARSENIC STIMULATES BLADDER EPITHELIAL CELL PROLIFERATION. P P Simeonova, J M Matheson, L Flood, D Germolec, M J Luster and W Toriumi. 1NIOSH, Morgantown, WV; 2Tanabe Seiyaku Company Ltd., Saitama, Japan; 3NIH, Research Triangle Park, NC.

WEDNESDAY MORNING, MARCH 17
9:30 AM - 12:30 PM
ERNST H. MORRIS CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION 4: CELL PROLIFERATION AND CELL CYCLE

Chairpersons: Alvaro Puga, University of Cincinnati, Cincinnati, OH and Thomas L. Goldsworthy, Integrated Laboratory Sciences, Inc., Research Triangle Park, NC

Displayed: 9:30 AM - 12:30 PM
Attended: 9:30 AM - 11:00 AM

#1328 PERTURBATION OF MOUSE LEYDIG CELL PROLIFERATION BY ESTROGENS. J W DuMond, Jr. and D Roy. Department of Environmental Health Sciences, University of Alabama, Birmingham, AL.

#1329 PROLIFERATIVE EFFECTS IN RESPIRATORY TISSUES OF THE SPRAE-DAWLEY RAT FOLLOWING STYRENE INHALATION EXPOSURE. M T Sidel and R A Schatz. Northeastern University Toxicology Program, Boston, MA.

#1330 ALPHA ASSOCIATED DECREASED PS3 BYSTANDER EFFECTS AND ENHANCED CELLULAR PROLIFERATION IN HUMAN LUNG FIBROBLASTS. R Iyer and B E Lehner. Los Alamos National Laboratory, Los Alamos, NM.

#1331 A PS3-INDEPENDENT METHYLMERCURY-INDUCED G2/M ARREST. M A C Mendoza, Y C Ou, S Hong and E M Faustman. Department of Environmental Health, University of Washington, Seattle, WA.

#1332 HUMAN MAMMARY EPITHELIAL CELLS EXHIBIT A DIFFERENTIAL PS3-MEDIATED RESPONSE FOLLOWING EXPOSURE TO IONIZING OR UV RADIATION. K M Meyer, S M Hess and S A Leadon. Curriculum in Toxicology and Department of Radiation Oncology, University of North Carolina, Chapel Hill, NC. Sponsor: J Swenberg.

#1333 COORDINATE INHIBITION OF CELL CYCLE PROGRESSION AND TCDD ACTIVATION OF CYP1A1 BY 12-O-TETRADECANOLPHORBOL-13-ACETATE. M Guo and J J Reiners, Jr. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.

#1334 BIOLOGICALLY-BASED DOSE-RESPONSE MODELING OF MULTISTAGE CARCINOGENESIS: DEVELOPMENT OF A MODIFIED MVK MODEL WITH EXPERIMENTAL DATA FROM SYRIAN HAMSTER EMBRYO (SHE) CELLS. K H Liao, D L Gustafson, M H Fox, L S Chubb, K F Reardon and R S H Yang. 1Center for Environmental Toxicology and Technology, Department of Environmental Health, 2Chemical and Bioresource Engineering and 3Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1335 CELL AUTONOMY AND THE RESPONSE OF THE HEPATOCYTE TO PARTIAL HEPATECTOMY. T C Wiegler and E P Sandgren. Department of Pathobiological Sciences, University of Wisconsin, Madison, WI.

#1336 INHIBITED GROWTH OF HUMAN HT29 COLON CARCINOMA CELLS BY DETOXIFICATION ENZYME INDUCERS IS REVERSED BY N-ACETYL CYSTEINE. R Y Odom, Y G Wirsay, D P Jones and W G. Kirlin. 1Morehouse School of Medicine, Atlanta, GA; 2Emory University School of Medicine, Atlanta, GA.
THE ACTIVATED AH RECEPTOR (AHR) BINDS TO HYPOPHOSPHORYLATED RETINOBLASTOMA (RB) PROTEIN AND REINFORCES THE REPRESION OF E2F-DEPENDENT EXPRESSION. A. Pogo1, S J Barnes1, E S Knudsen1, C Y Chang2, A Maier1 and BL Schumam1. 1Department of Environmental Health and 2Department of Cell Biology, Neurobiology and Anatomy, University of Cincinnati Medical Center, Cincinnati, OH.

MECHANISM OF ESTROGEN-INDUCED E2F1 GENE EXPRESSION: ROLE OF ESTROGEN RECEPTOR/Sp1 INTERACTIONS WITH NF-YA. W Wang and S Safe. Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

DIETHYLSTILBESTROL (DES) INDUCES APOPTOSIS AND AFFECTS CELL CYCLE IN A MURINE THYMOCYTE-LIKE CELL LINE RL-3. M D Laisoa, Z-W Lai and A E Silverstone. Department of Microbiology and Immunology, SUNY Health Science Center, Syracuse, NY.

INHIBITION OF THE MAPK PATHWAY BLOCKS QUINONE-THIOETHER MEDIATED CYTOTOXICITY, BUT NOT GROWTH ARREST, IN LLC-PK1 CELLS. Q Huang, S S Lau and T J Monks. Division of Pharmacology, College of Pharmacy, University of Texas at Austin, Austin, TX.

BREVETOXINS INDUCE A NEUROTOXIC RESPONSE IN CULTURED RAT CEREBELLAR GRANULE NEURONS THAT IS MEDIATED BY NMDA RECEPTORS. F W Berman and T F Murray. Department of Physiology and Pharmacology, College of Veterinary Medicine, University of Georgia, Athens, GA. Sponsor: R P Sharma.

OXIDIZED CEREBROSPINAL FLUID LIPOPROTEINS CAUSE MICROTUBULE DISRUPTION AND CYTOTOXICITY IN NEURO 2A CELLS. M D Neely, L E Swift, K R Sidell, D G Graham and T J Montine. Department of Pathology, Vanderbilt University Medical Center, Nashville, TN.

γ-DIKETONE NEUROPATHY: I. QUALITATIVE NEUROPATHIC ASSESSMENT. J H Fox1, B S Jortner1, E J Lehning2, R M LoPachin2, S K Perkins1 and D Ward1. 1Laboratory for Neurotoxicity Studies, Virginia Tech, Blacksburg, VA; 2Anesthesiology Research, Albert Einstein College of Medicine, Bronx, NY.

γ-DIKETONE NEUROPATHY: II. MORPHOMETRIC ANALYSES OF AXONAL ATROPHY AND SWELLING. E J Lehning1, B S Jortner2, J H Fox3, F C Chiu1 and R M LoPachin1. 1Albert Einstein College of Medicine, Bronx, NY; 2Virginia Tech, Blacksburg, VA.

γ-DIKETONE NEUROPATHY: III. NEUROFILAMENTS SUBUNIT CONTENT. F C Chiu, R Malchie, D K He, E J Lehning and R M LoPachin. Anesthesiology Research, Albert Einstein College of Medicine, Bronx, NY.

ROLE OF CALCINEURIN AND IMMUNOPHILINS IN THE DECREASE OF BRAIN ENERGY METABOLISM CAUSED BY IMMUNOSUPPRESSANTS. N Serkova1, L Litt2, T L James3, R E Morris4, L Z Benet1 and U Christians1. Departments of 1Biopharmaceutical Sciences, 2Anesthesiology and 3Pharmacological Chemistry, University of California at San Francisco, CA; 4Department of Cardiothoracic Surgery, Stanford University, CA. Sponsor: D E Johnson.

GLUTATHIONE AND ANTIOXIDANTS PROTECT AGAINST THE IN VITRO TOXICITY OF METHYL IODIDE TO CEREBELLAR GRANULE CELLS. M P Chamberlain1, N C Sturge2, E A Lock2 and C J Reed1. 1Liverpool John Moores University, Liverpool, UK; 2Zeneca Central Toxicology Laboratory, Cheshire, UK.
#1349 EFFECTS OF ACUTE IBOGAINE ADMINISTRATION ON THE PERFORMANCE OF COMPLEX OPERANT TASKS IN RATS. Z Xu2, A J Mayorga1, C M Fogle1, A Scallen1, L W Chang2, W Sliker and M G Pauls1. 1Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, AR; 2Department of Pathology, University of Arkansas for the Medical Sciences, Little Rock, AR.

#1350 CYTOTOXICITY OF 2-HALOPROPIONIC ACIDS TO CEREBELLAR GRANULE CELLS IN CULTURE. N C Sturgess, B E Birtwistle and E A Lock. Zeneca Central Toxicology Laboratory, Cheshire, UK.

#1351 PHARMACOLOGICAL MODULATION OF BEHAVIORAL CONVULSIONS INDUCED BY TRIMETHYLOLPROPANE PHOSPHATE (TMPP). J Rossi, III1, G D Ritchie2, S M McInturth2 and A F Nordholm1. 1Naval Health Research Center Detachment-Toxicology and 2Geo-Centers, Inc., Wright-Patterson AFB, OH. Sponsor: E A Smith.

#1352 PAROXYSMAL DISCHARGES INDUCED BY TRIMETHYLOLPROPANE PHOSPHATE (TMPP) IN RAT HIPPOCAMPAL PYRAMIDAL CELLS. J Lin3, G D Ritchie2, A F Nordholm1 and J Rossi III1. 1Naval Health Research Center Detachment-Toxicology; 2Geo-Centers, Inc. and 3MannTech Environmental Technology, Inc., Wright-Patterson AFB, OH. Sponsor: E A Smith.

#1353 IN VIVO ASSESSMENT OF PERIPHERAL BENZODIAZEPINE RECEPTOR LEVELS IN A BABOON BRAIN FOLLOWING PERMANENT CAROTID ARTERY OCCLUSION. A C Kuhlmann1, M K Nihel1, V Villemagne2, F Yokop3, R J Adams3, D F Wong4, R F Dannals4 and T R Guirarte4. 1Department Environmental Health Sciences, School of Public Health; 2Department Radiology, 3Div. Comparative Medicine, 4Div. Nuclear Medicine, School of Medicine, The Johns Hopkins University, Baltimore, MD.

#1354 DEVELOPMENT OF IN VITRO SCREENING ASSAYS FOR POTENTIALLY NEUROTOXIC POLYCYCLIC AROMATIC HYDROCARBONS IN C6 RAT GLIOMA CELLS. D Alexander, K C Donnelly and E Tiffany-Castiglioni. Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.

#1355 FIXED-INTERVAL PERFORMANCE FOLLOWING DEVELOPMENTAL EXPOSURE TO A1254, A COMMERCIAL POLYCHLORINATED BIPHENYL MIXTURE. M M Taylor, K M Crofton and R C MacPhall. Neurotoxicology Division, NHEERL, US EPA, Research Triangle Park, NC.

#1356 PERFORMANCE ON A SPATIAL MEMORY TASK IN ADULT RATS FOLLOWING PERINATAL EXPOSURE TO AROCLOR® 1254. W R Mundy, B A Allen, E S Craft, M E Gilbert, P R S Kodavanti and K M Crofton. Neurotoxicology Division, NHEERL, US EPA, Research Triangle Park, NC.


#1358 DEVELOPMENTAL EXPOSURE TO AROCLOR® 1254 PRODUCES A PERSISTENT DECREMENT IN THE MAGNITUDE OF LONG-TERM POTENTIATION IN THE DENTATE GYRUS IN VIVO. M E Gilber1,2 and K M Crofton2. 1National Research Council, 2Neurotoxicology Division, NHEERL, Neurotoxicology, US EPA, Research Triangle Park, NC.

#1359 THE EFFECTS OF DEVELOPMENTAL EXPOSURE TO POLYCHLORINATED BIPHENYLS ON D1 AND D2 DOPAMINE RECEPTORS IN JUVENILE AND ADULT RATS. J A Guarisco, R I Carr and J E Chambers. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1360 SPONTANEOUS CATECHOLAMINE RELEASE AS MEASURED BY SINGLE CELL AMPEROMETRY: DISRUPTION BY TETRANTRINE AND 2, 3', 4', 5'-TETRACHLOROBIPHENYL. Z Heck and H J Wiegand. Medical Institute of Environmental Hygiene at the Heinrich-Heine University, Duesseldorf, Germany.

#1361 5-HYDROXYTRYPTOPHAN TOXICOSIS IN DOGS. S M Gwaltney-Brant, J C Albreten and S A Khan. ASPCA National Animal Poison Control Center, Urbana, IL.

#1362 AN EXAMINATION OF THE BIOCHEMICAL AND BEHAVIORAL EFFECTS OF MPTP IN TWO SNAKE SPECIES. J G Temple1, D B Miller2 and G T Bartholomus3. 1Mary Washington College, Fredricksburg, VA; 2NIOSH, Morgantown, WV; 3North Carolina State University, Raleigh, NC.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#1363
ACUTE AND LONG-TERM EFFECTS OF MPP+
IN CELL LINES COEXPressING PLASMA
MEMBRANE AND VESICULAR DOPAMINE
TRANSPORTERS. G W Miller, S E Stephens, J T
Greenamyre and A I Levey. Division of
Pharmacology and Toxicology, University of Texas,
Austin, TX; Department of Neurology, Emory
University, Atlanta, GA.

#1364
METHAMPHETAMINE NEUROTOXICITY:
PROTECTIVE ROLE OF SELENIUM AND
IN VolVEMENT OF S-ADENOSYLMETHIONINE. S Z Imam,
G D Newport, C K Wise, C A Cooney, L A Poitier,
F Islam, W Slikker Jr. and S F Ahl. 1 Neurochemistry Laboratory,
Division of Neurotoxicity, 2 Division of Molecular
Epidemiology, National Center for Toxicological
Research/FDA, Jefferson, AR; 3 Neurotoxicology
Laboratory, Department of Medical Embryology &
Toxicology, Hamdard University, New Delhi, India.

#1365
INTRASTRIATAL, INTRACORTICAL AND
INTRAHIPPOCAMPAL ADMINISTRATION OF
GLUTATHIONE AND N-ACETYLCYSTEINE
CONJUGATES OF 6-METHYLDOPAMINE
PRODUCES SEROTONERGIC
NEUROTOXICITY. S Bai, S S Lau and T J Monks.
Division of Pharmacology and Toxicology, College of
Pharmacy, University of Texas at Austin, Austin, TX.

#1366
REPEATED EXPOSURE RESULTS IN THE
LOSS OF THE NEUROPROTECTIVE
PROPERTIES OF RESTRAINT-INDUCED
HYPOTHERMIA IN THE SUBSTITUTED
AMPHETAMINE MODEL OF STRIATAL
DOPAMINERGIC NEUROTOXICITY. E A
Johnson, J P O'Callaghan and D B Miller. Chronic
Stress and Neurotoxicology Lab, Toxicology &
Molecular Biology Branch, CDC-NIOSH,
Morgantown, WV.

#1367
EFFECTS OF MULTIPLE DOSES OF L-
EPHEDRINE ON DOPAMINE,
DIHYDROXYPHENYL ACETIC ACID AND 5-
HYDROXYINDOLEACETIC ACID IN BRAIN
MICRODIALYSATE AND BODY
TEMPERATURE. J Tor-Aghidiye, W Slikker, Jr. and J F Bowyer.
Division of Neurotoxicology, National
Center for Toxicological Research/FDA, Jefferson,
AK.

#1368
COPPER SULFATE PRETREATMENT INHIBITS
MPP+-INDUCED STRIATAL LIPID
PEROXIDATION (LPO) IN MICE. M Alcaraz-
Zubeldia and C Rios C. Department of
Neurochemistry, National Institute of Neurology and
Neurosurgery, Mexico City, Mexico.

#1369
METALLOTHIONEIN-I AND -II KNOCK-OUT
MICE ARE NOT MORE SENSITIVE THAN
CONTROL MICE TO 1-METHYL-4-PHENYL-
1,2,3,6-TETRAHYDROPYRIDINE
NEUROTOXICITY. P Rojas, S S M Habbebu, J
Liu and CD Klaassen. National Institute of
Neurology & Neurosurgery, Mexico City, Mexico;
University Kansas Medical Center, Kansas City, KS.

#1370
METALLOTHIONEIN EXPRESSION AND
RADIATION PROTECTION IN PRIMARY
HUMAN CNS CULTURES. L Cai, R R Hammond
and M G Cherian. Department of Pathology,
University of Western Ontario, London, Ontario,
Canada.

#1371
EBSELEN (2-PHENYL-1,2
BENZISOALENAZOL-3-(2H) ONE) INDUCES
HO-1 PROTEIN (HEME OXYGENASE-1) IN RAT
HIPPOCAMPAL ASTROCYTES. D Hardej and L
D Trombeta. College of Pharmacy, St. John's
University, New York, NY.

#1372
ACUTE NEUROTOXIC EFFECTS OF INHALED
TRICHLOROETHYLENE (TCE): LINKING
APPLIED DOSE, ABSORBED DOSE (BLOOD),
TARGET TISSUE DOSE (BRAIN) AND
OUTCOME MEASURES. W K Boyes, P J
Bushnell, M V Evans, J E Simmons and J H
Raymer. 1 US EPA, Research Triangle Park, NC;
2Research Triangle Institute, Research Triangle Park,
NC.

#1373
ANILINE-INDUCED SPONGY CHANGE OF THE SPINAL WHITE MATTER IN RATS.
Y Okazaki, K Yamashita, M Sudo, M Tsuchitani, I Nara, R Yamaguchi and S Tateyama.
1 Mitsubishi Chemical Safety Institute Ltd., Kashima,
Ibaraki, Japan; 2 Setsumi University, Hirakata, Osaka,
Japan; 3 Miyazaki University, Miyazaki, Japan.

#1374
DOES THE VULNERABLE PERIOD FOR
DEVELOPMENTAL NEUROTOXICITY OF
NICOTINE EXTEND INTO ADOLESCENCE? J
A Prauth, E C McCork, F J Seidler and T A Sloakin.
Department of Pharmacology and Cancer Biology,
Duke University Medical Center, Durham, NC.

#1375
ESTABLISHMENT OF AN IN VITRO MODEL
OF THE BLOOD-BRAIN BARRIER FOR
DELINEATING THE TRANSPORT OF
THIOETHER CONJUGATES INTO BRAIN. F G
Suleman, S S Lau and T J Monks. Division of
Pharmacology and Toxicology, College of Pharmacy,
University of Texas Austin, Austin, TX.
THE CELLULAR NEUROTOXICITY TEST BATTERY USED IN THE ERGAT/CFN INTEGRATED TOXICITY TEST SCHEME (ECTTS). A Fosby1, M Nordin-Andersson1, N Heldring1 and J DeJongh2. 1Stockholm University, Department of Neurochemistry and Neurotoxicology, Stockholm, Sweden; 2RITOX, Utrecht University, Utrecht, The Netherlands. Sponsor: B Ekwall.

NOISE-INDUCED HEARING LOSS IN DIFFERENT CARBON MONOXIDE ENVIRONMENTS. G Chen, M L McWilliams and L D Fechter. University of Oklahoma Health Science Center, Oklahoma City, OK.

ACUTE DISRUPTION OF COCHLEAR POTENTIALS BY POTASSIUM CYANIDE. W Tawackoli and L D Fechter. University of Oklahoma Health Science Center, Oklahoma City, OK.

EFFECTS OF EXPOSURE DURATION ON POTENTIATION OF NOISE INDUCED HEARING LOSS BY CARBON MONOXIDE. D B Rao, G D Chen and L D Fechter. University of Oklahoma Health Science Center, Oklahoma City, OK.

SUBCHRONIC TOXICITY OF PILOCARPINE IN RATS. S M Henwood1, R F Marshall2, T J Ryan1, M J Palazzolo1 and J R MacDonald2. 1Covance Laboratories Inc., Madison, WI; 2MGI Pharma, Inc., Minnetonka, MN.


METALLOTHIONEIN ISOFORM GENE EXPRESSION IN HUMAN PROXIMAL TUBULE CELLS EXPOSED TO ZINC, COPPER, CADMIUM, MERCURY, SILVER and LEAD. S H Garrett, S Somji, J H Todd and D A Sens. Department of Pathology, West Virginia University, Morgantown, WV.

TRANSIENT NUCLEAR TRANSLOCATION OF METALLOTHIONEIN DURING MYOBLAST PROLIFERATION AND DIFFERENTIATION. M D Apostolova and M G Cherian. Department of Pathology, University of Western Ontario, London, Canada.

ROLE OF METALLOTHIONEIN (MT) IN THE UPTAKE AND DISTRIBUTION OF ENVIRONMENTAL LEVELS OF CADMIUM IN MICE. S S Rajan, A K Wilson and M H Bhattacharya. Argonne National Laboratory, Argonne, IL.

SURGICAL CHOLESTASIS DOES NOT PRODUCE ZINC (Zn) MOBILISATION FROM PLASMA TO LIVER IN RATS. E Brambila-Colombres, A Alborer and J L Munoz-Sanchez. Faculty of Chemistry, University of Pueba, Environmental Toxicology Section, Cimostav and National School of Biological Sciences, IPN., Mexico.

METAL PRETREATMENT INDUCES METALLOTHIONEIN AND ALTERS HORMONE RESPONSIVENESS IN MAMMALIAN CELLS. J M DeMoor, O M Collins and J Koropatnick. London Regional Cancer Centre, London, Ontario, Canada.

METALLOTHIONEIN LEVELS IN HUMAN PERIPHERAL BLOOD LYMPHOCYTES: UTILITY IN ENVIRONMENTAL EXPOSURE ASSESSMENT. E J Yerkov and C J DeCoste. Environmental and Occupational Health sciences Institute, Rutgers University, Piscataway, NJ.

METALLOTHIONEIN AND INNATE ACTIVITATION OF PRIMARY HUMAN AND MOUSE MONOCYTES. S Dale1, R K Zalups2 and D J Koropatnick1. University of Western Ontario, London, ON, Canada; 2Mercer University School of Medicine, Macon, GA.
#1390 CARDIOVASCULAR SAFETY ASSESSMENT OF BMS-196854 (ONCOSTATIN M) IN CONSCIOUS CYNOMOLGUS MONKEYS. M A Nedelman and C R Comericki. Primedica Corporation, Worcester, MA; Bristol-Myers Squibb, Department of Biologies Evaluation, Syracuse, NY.

#1391 APPLICATION OF THE INTEGRATED TELEMETRY SYSTEM FOR CARDIOVASCULAR ASSESSMENT OF PHARMACOTHERAPIES TO TREAT COCAINE ABUSE. J H Ludens¹, P E Newton¹, N B Olivier², G J Schaefer³, M P Smith¹, M H Wang¹ and J B Terrill⁴. ¹MPI Research, Mattawan, MI; ²Michigan State University, East Lansing, MI; ³National Institute on Drug Abuse, Rockville, MD.

#1392 FOUR-DAY CONTINUOUS INTRAVENOUS INFUSION TOXICITY STUDIES OF THE ENDOTHELIN ANTAGONIST CI-1020 IN BEAGLE DOGS AND CYNOMOLGUS MONKEYS. N J Graggman¹, G E Macallum¹, M A Albassam², R M Walker¹, H Hallak² and S Halsem². Parke-Davis Pharmaceutical Research Division, Warner-Lambert Company, ¹Mississauga, ON, Canada and ²Ann Arbor, MI.

#1393 MATHEMATICAL CORRECTIONS FOR THE INVERSE RELATIONSHIP BETWEEN QT INTERVAL AND HEART RATE IN CONSCIOUS BEAGLE DOGS AND CYNOMOLGUS MONKEYS. M M Cooper¹ and A S Bass². ¹Research Biostatistics and ²Preclinical Toxicology-Safety Pharmacology, Pharmacia & Upjohn, Kalamazoo, MI. Sponsor: T W Petry.

#1394 CARDIOTOXICITY OF NERIFOLIN (NSC1243975) IN BEAGLE DOGS. C R Hasler¹, R I Hamlin¹, N A Turner¹, K M Schweikart² and J B Tomaszewski³. ¹Battelle, Columbus, OH; ²The Ohio State University, College of Veterinary Medicine, Columbus, OH; ³National Cancer Institute, Rockville, MD. Sponsor: A R Dahl.

#1395 BOLUS INTRAVENOUS INJECTIONS OF PHOSPHOROTHIOATE OLGIDEOXY-NUCLEOTIDES CAUSE SEVERE HYPTENSION BY ACTING AS ALPHA-1 ADRENERGIC RECEPTOR ANTAGONISTS. P L Iversen¹, K G Cornish¹, L J Iversen¹, J E Mata¹,¹ and D B Bylund¹. ¹Department of Pharmacology and ²Department of Physiology, University of Nebraska Medical Center, Omaha, NE; ³AVI BioPharma, Corvallis, OR.

#1396 THE EFFECTS OF NANDROLONE ON MYOCARDIAL FUNCTION IN HAMSTERS: BIOINDICATORS OF TOXICITY. S F Long¹ and E Puglielli². ¹Department of Pharmaceutical Sciences, School of Pharmacy, Southwestern Oklahoma State University, Weatherford, OK; ²ChemAdvisor, Pittsburgh, PA. Sponsor: C L Winek.


#1398 KINETICS OF CALCIUM IN SPONTANEOUS CARDIAC CALCIFICATION IN DBA/2 MICE. N Maeda¹, K Fukuda¹, T Hosokawa¹, S Manabe¹, S Itagaki¹ and K Doi¹. ¹Lab. Anim. Sci. & Tok. Labs., Sankyo Company, Ltd., Tokyo, Japan; ²The University of Tokyo, Tokyo, Japan.

#1399 RAT CARDIOVASCULAR DYSFUNCTION PRIOR TO DEATH DURING EXPOSURE TO CONCENTRATED AMBIENT AIR PARTICLES. E G Lovett¹, R W Clarke¹, R L Verrier¹, P Kouriakis¹, J Lawrence¹, J M Antonin² and J J Godleski¹. ¹Harvard School of Public Health, Boston, MA; ²HELD/NIOSH, Morgantown, WV.

#1400 ACUTE CARDIORESPIRATORY EFFECTS OF PYRIDOSTIGMINE BROMIDE AND N,N-DIETHYL-m-TOLUAMIDE (DEET) IN RATS. L A Chaney, R W Rockhold and A S Hume. University of Mississippi Medical Center, Jackson, MS.

#1401 ACCELERATION OF Atherosclerotic PLAQUE FORMATION IN APO E-/- MICE BY EXPOSURE TO TOBACCO SMOKE. C G Gairola¹ and A Daugherty¹. ¹College of Pharmacy and ²Medicine, University of Kentucky, Lexington, KY.

#1402 ALLYLAMINE AFFECTS GLUCOSE UPTAKE IN RAT VASCULAR SMOOTH MUSCLE CELLS. S G Milton and Z Yousefipour. College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX. Sponsor: M A Smith.
COLLAGEN AND ELASTIN DEPOSITION BY VASCULAR SMOOTH MUSCLE CELLS IN RESPONSE TO INHIBITION OF SEMICARBAZIDE-SENSITIVE AMINE OXIDASE. S D Langford, M B Trent and P J Boor. Cardiovascular Toxicology Laboratory, University of Texas Medical Branch, Galveston, TX.

CYTOTOXICITY OF ERGINE TO BOVINE ENDOTHELIAL CELLS IN CULTURE. A E Schulze and J W Oliver. College of Veterinary Medicine, The University of Tennessee, Knoxville, TN.

DISPLACEMENT OF 3-H-KETANSERIN IN THE HUMAN UMBILICAL ARTERY BY MİANSERIN, TYRAMINE AND SEROTONIN. T L Long, P J Rice, F R Jelovsek and K E Ferslew. 1Toxicology & Risk Assessment Section, Oak Ridge National Laboratory, Oak Ridge, TN; 2Section of Toxicology, Department of Pharmacology and 3Department of Obstetrics and Gynecology, East Tennessee State University, Johnson City, TN.

MENADIONE-INDUCED VASCULAR ENDOTHELIAL DYSFUNCTION AND ITS POSSIBLE SIGNIFICANCE. J Y Lee, M Y Lee, S M Chung and J H Chung. College of Pharmacy, Seoul National University, Seoul, Korea.

MECHANISM FOR MENADIONE-INDUCED ENDOTHELIAL DYSFUNCTION. J H Chung, J Y Lee, M Y Lee and S M Chung. College of Pharmacy, Seoul National University, Seoul, Korea.

DEVELOPMENTAL VASCULOTOXICITY ASSOCIATED WITH INHIBITION OF SEMICARBAZIDE-SENSITIVE AMINE OXIDASES. P J Boor, S D Langford, M B Trent and A Balakumaran. Cardiovascular Toxicology Laboratory, University of Texas Medical Branch, Galveston, TX.

THEOPHYLLINE INDUCES SPLANCHNIC ARTERIAL DAMAGE IN RATS. E S Watson, D E Griswold, L W Schwartz and S J Newholme. SmithKline Beecham Pharmaceuticals, King of Prussia, PA.


WEDNESDAY AFTERNOON, MARCH 17

WEDNESDAY AFTERNOON, MARCH 17
12:00 NOON - 1:30 PM
ERNEST N. MORIAL CONVENTION CENTER ROOMS R02-R03

ROUNDTABLE SESSION: THE CHALLENGES OF USING COMMON MECHANISMS OF TOXICITY IN CHEMICAL REGULATION

Sponsored By: The Neurotoxicology and Risk Assessment Specialty Sections and the Task Force to Improve the Scientific Basis of Risk Assessment

Chairpersons: Janice E. Chambers, Mississippi State University, Mississippi State, MS and Larry P. Sheets, Bayer, Stillwell, KS

The 1996 Food Quality Protection Act (FQPA) has mandated that cumulative risk assessments be performed on pesticides acting through a common mechanism of toxicity. This strategy has not previously been used in pesticide regulation by the US Environmental Protection Agency (EPA). FQPA requires that new questions be asked to determine which pesticides act through a common mechanism of toxicity, and subsequently what methodology is appropriate for the new cumulative risk assessments. The FQPA-mandated time frame for reregistration of pesticides has created substantial pressure for the rapid development of new principles and procedures. Since these new principles and methods are without precedent in the risk assessment process for pesticides, there is considerable controversy regarding identification of cases when such cumulative risk assessments should be performed, and, if required, how they should be conducted. The roundtable panelists will present some common principles which can be used in judging whether toxicants act by a common mechanism of toxicity, and how these general principles were used to consider the anticholinesterase (organophosphate and carbamate) insecticides as a case study. The roundtable will also indicate the limitations and difficulties which arise by utilizing a restricted definition of mechanism of toxicity. Additionally, the roundtable will suggest possible methods which could be used to perform cumulative risk assessments on toxicants judged to act through a common mechanism of toxicity, and will indicate how the EPA is currently utilizing the common mechanism approach in its implementation of FQPA. The roundtable is designed to introduce a number of the controversies and pending questions associated with the common mechanism of toxicity issue.

THE CHALLENGES OF USING COMMON MECHANISMS OF TOXICITY IN CHEMICAL REGULATION. J E Chambers and L P Sheets. Mississippi State University, Mississippi State, MS and Bayer Corporation, Stillwell, KS.

L P Sheets, Bayer Corporation, Stillwell, KS.

J. Chambers, Mississippi State University, Mississippi State, MS.

M. Dourson, Toxicology Excellence for Risk Assessment, Cincinnati, OH.

P. Fenner-Crisp, US EPA, Washington, DC.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

12:25 GENERAL DISCUSSION.

WEDNESDAY AFTERNOON, MARCH 17
12:00 NOON - 1:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R04-R05

ROUNDTABLE SESSION: A PARTNERSHIP APPROACH TO THE EVALUATION OF ALTERNATIVE MODELS FOR CARCINOGENICITY TESTING

Sponsored By: The Carcinogenesis and Regulatory and Safety Evaluation Specialty Sections

Chairpersons: James S. MacDonald, Schering-Plough Research Institute, Kenilworth, NJ and Denise E. Robinson, ILSI, Washington, DC

The willingness of the agencies involved in the regulation of pharmaceuticals to accept data from newly proposed models of carcinogenicity testing (e.g. transgenic animals and the neonatal mouse model) has stimulated intense international interest in gaining experience and a greater understanding of the strengths and limitations of the specific models. The International Life Sciences Institute (ILSI) Health Environment Sciences Institute (HESI) is currently coordinating a collaborative research program to characterize the responsiveness of alternative models for carcinogenicity testing. Participating in this research effort are nearly 60 industrial, government and academic laboratories from the United States, Europe and Japan. The program involves the development of standardized protocols for variety of alternative assays and the use of prototype compounds selected on the basis of mechanistically meaningful carcinogenic activity or non-carcinogenicity in the rodent bioassay. In addition, collaborative research will be conducted in number of academic institutions to gain a greater understanding of the mechanistic basis for the responses of these new models, facilitating interpretation of the findings. Most of the studies are underway and results will be forthcoming throughout 1999. A workshop will be organized by ILSI in late 1999 to present the combined results of these studies.

This roundtable will describe the scientific and regulatory basis for the collaborative research effort, and provide perspectives by some of the participating government, industry and academic scientists from the U.S., Europe and Japan on these models. Emphasis will be placed on the unique partnership that has been formed between these sectors to generate the necessary information to evaluate these models. The goal of the roundtable will be to stimulate discussion regarding the model the partnership provides for future cooperative activities aimed at evaluating new proposed approaches that may enhance toxicity assessments.

#1412 12:00 A PARTNERSHIP APPROACH TO THE EVALUATION OF ALTERNATIVE MODELS FOR CARCINOGENICITY TESTING. D E. Robinson and J S MacDonald. International Life Sciences Institute, Washington, DC and Schering-Plough Research Institute, Kenilworth, NJ.

12:05 R Tennant, NIEHS, Research Triangle Park, NC.

12:10 J DeGeorge, US FDA, Rockville, MD.

12:15 M McClain, UMDNJ, Robert Wood Johnson Medical School, Piscataway, NJ.

12:20 J Popp, Sanofi Research Div, Malvern, PA.

12:25 J C Barrett, NIEHS, Research Triangle Park, NC.

12:30 GENERAL DISCUSSION.

WEDNESDAY AFTERNOON, MARCH 17
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R04-R05

SYMPOSIUM SESSION: ALIPHATIC ETHERS AS FUEL OXYGENATES, HEALTH EFFECTS AND REGULATORY ISSUES

Sponsored By: The Inhalation Specialty Section and the Task Force to Improve the Scientific Basis of Risk Assessment

Chairpersons: Susan J. Borghoff, CIIH, Research Triangle Park, NC and Janet M. Benson, ITRI, Albuquerque, NM

The Clean Air Act Amendments of 1990 require the use of oxygenated fuel in certain regions of the USA to reduce carbon monoxide emissions. Currently, the aliphatic ether most widely used to oxygenate gasoline is methyl tert-butyl ether (MTBE). However, other compounds of similar structure such as ethyl tert-butyl ether (ETBE) and tert-amyl methyl ether (TAME) are being used on a more limited basis. Because MTBE is added to gasoline at up to 15% v/v, an enormous amount is being produced. People are potentially exposed to these compounds at low levels while refueling and driving automobiles (inhalation) and drinking contaminated water (ingestion). Complaints from the public along with chronic adverse effects of MTBE in rodents precipitated the need to further investigate the potential health effects of these ethers in people. An overview of the general toxicity (MTBE, ETBE, and TAME) and cancer (MTBE) studies carried out in rodents will be covered to emphasize the key human risk assessment issues associated with these chemicals. Results from human exposure studies will be presented and comparative studies on metabolic fate, and acute toxicity of these ethers in rodents and people will be included. Studies describing the potential modes of action by which MTBE induces tumors in chronic rodent studies will be described. Current risk assessment issues will be discussed and how the available information on these ethers is being used to carry out a more realistic risk assessment of the potential human health effects from exposure to these compounds.

#1413 1:30 ALIPHATIC ETHERS AS FUEL OXYGENATES: HEALTH EFFECTS AND REGULATORY ISSUES. S J Borghoff and J M Benson. Chemical Industry Institute of Toxicology, Research Triangle Park, NC and Lovelace Respiratory Research Institute, Albuquerque, NM.

#1414 1:40 NEUROTOXIC, DEVELOPMENTAL AND TUMORIGENIC EFFECTS OF METHYL TERT-BUTYL ETHER. J Benson. Lovelace Respiratory Research Institute, Albuquerque, NM.

#1415 2:10 TOXICITY AND TOXICOKINETICS OF ALIPHATIC ETHERS HUMAN VS RODENT STUDIES. G Johanson1,2 and A Nilhen1. National Institute for Working Life, Solna, Sweden; 1Department of Occupational and Environmental Medicine, Uppsala University Hospital, Sweden.
THE ROLE OF DNA REPAIR IN MAINTENANCE OF GENOME STABILITY. D L Springer and W M Baird. Molecular Biosciences Department, Battelle Pacific Northwest National Laboratory, Richland, WA and Environmental Health Sciences Center, Oregon State University, Corvallis, OR.

DNA REPAIR PATHWAYS AND ENVIRONMENTAL GENOMICS. S H Wilson. Laboratory of Structural Biology, Division of Intramural Research, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: D L Springer.


ROLE OF DNA/HISTONE INTERACTIONS IN DNA REPAIR. D L Springer and V L Burnett. Pacific Northwest National Laboratory, Richland, WA.


4:00 GENERAL DISCUSSION.

SYMPOSIUM SESSION: CHEMICAL MODIFIERS OF RESPONSE TO FOOD-BORNE MICROBIAL PATHOGENS

Sponsored By: The Food Safety and Mechanisms Specialty Sections

Chairpersons: Ronald T. Riley, USDA-ARS, Athens, GA and James J. Pestka and Robert A. Roth, Michigan State University, East Lansing, MI

Do chemicals contribute to increased human and animal health risks from exposure to food-borne microbial pathogens and their toxins? Chemicals can alter biological processes that are critical determinants in the host response to microbial pathogens and their products. Conversely, microbial pathogens induce inflammatory responses that can modify susceptibility to xenobiotics. Outbreaks of disease due to contamination of food and water with well-known and newly emerged microbial agents have been on the rise in developed countries. Characterization of the toxins produced by such pathogens

WEDNESDAY AFTERNOON, MARCH 17
1300 PM - 4:30 PM ERNEST N. MORIAL CONVENTION CENTER ROOMS R02-R03

SYMPOSIUM SESSION: THE ROLE OF DNA REPAIR IN MAINTENANCE OF GENOME STABILITY

Sponsored By: The Carcinogenesis and Mechanisms Specialty Sections

Chairpersons: David L. Springer, Pacific NW National Laboratory, Richland, WA and William M. Baird, Oregon State University, Corvallis, OR

The ability of cells to repair damage to their DNA induced by xenobiotics is a critical factor in determining whether these agents induce mutations which can lead to diseases such as cancer. Recently there have been major advances in our understanding of the molecular processes of DNA repair. This symposium will describe some of the recent progress in determining the mechanism of repair of damaged DNA and the relationship between lesion removal and mutations. Structural studies of proteins involved in base excision repair, the process required to remove oxidative base damage and certain types of radiation-induced lesions, coupled with functional studies now provide an understanding of the molecular basis of this repair process. This understanding has been advanced by in vitro studies using DNA-histone substrates (i.e., chromatin complexes) that demonstrate the mechanisms by which DNA-protein interactions result in damage recognition and repair. Simultaneously, advanced PCR techniques have been developed to provide information on the location of damage within the genome, allowing measurements of damage removal at specific DNA bases, to determine how persistence of such adducts is related to the location of mutations in tumors. Recent availability of transgenic animals with specific repair gene knockouts are allowing the identification of critical genes involved in repair of different types of DNA damage. Thus, information from both molecular and structural biology approaches, coupled with sensitive analytical techniques, are providing the basis for improved risk assessments for DNA damaging agents by facilitating low dose extrapolation and interspecies comparisons.

BIOTRANSFORMATION OF METHYL TERT-BUTYL ETHER IN HUMANS AND RATS. W Dekant, A Amberg and E Rosner. Department of Toxicology, University of Wurzburg, Wurzburg, Germany.

SPECIES-SPECIFIC TUMOR RESPONSES FOLLOWING EXPOSURE TO METHYL TERT-BUTYL ETHER (MTBE): POTENTIAL MODES OF ACTION. S J Borghoff1, T M Williams1, J Prescott-Mathews2, G Moser3 and T L Goldsworthy3. 1Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 2Merck Research Laboratories, West Point, PA; 3Integrated Laboratory Systems, Research Triangle Park, NC.

and their role in tissue injury and disease progression is a challenging area of research. For example, the Shiga toxin family, produced by Shigella and E. coli 0157:H7, includes proteins that modify the host immune response and play key roles in the development of gastrointestinal and renal disease. In addition, bacterial endotoxin arising from translocation from the intestine into the circulation can interact with food-borne chemicals, leading to injury in liver and other tissues. For example, endotoxin can interact with mycotoxins to promote expression of proinflammatory cytokines and activation of apoptotic processes. Several recent discovered food contaminants can alter the expression of microbial pathogen/toxin receptors and adhesion sites. Food contaminants may also alter translocation of the toxins or the pathogen itself and can increase intestinal permeability, resulting in altered response to food-borne microbial pathogens/toxins. Thus, multiple interactions need to be considered when assessing risk of food-related disease.

#1424 1:30 CHEMICAL MODIFIERS OF RESPONSE TO FOOD-BORNE MICROBIAL PATHOGENS. R T Riley1, J J Pestka2 and R A Roth3. 1USDA-ARS, Athens, GA; 2Michigan State University, East Lansing, MI.

#1425 1:40 EMERGING FOOD AND WATER-BORNE MICROBIAL DISEASES. M A Smith and D L Holcomb. University of Georgia, Athens, GA.

#1426 2:10 BIOCHEMICAL AND PHYSIOLOGICAL FACTORS THAT AFFECT PATHOGENESIS CAUSED BY SHIGA TOXIN-PRODUCING ESCHERICHIA COLI. V L Tesh. Texas A&M University Health Science Center, College Station, TX. Sponsor: R T Riley.

#1427 2:40 BACTERIAL ENDOTOXIN INTERACTIONS WITH FOOD-BORNE CHEMICALS IN THE LIVER. R A Roth. Michigan State University, East Lansing, MI.

#1428 3:10 AMPLIFICATION OF ENDOTOXIN-MEDIATED CYTOKINE EXPRESSION AND LYMPHOCYTE APOPTOSIS BY TRICHOTHECENES: A PARADIGM FOR MICROBE-TOXICANT INTERACTIONS. J J Pestka. Michigan State University, East Lansing, MI.

#1429 3:40 XENOBIOTIC-INDUCED ALTERATIONS IN GLYCOSPHINGOLIPID RECEPTORS, MICROBIAL TOXIN BINDING, ADHESION AND TRANSLOCATION: POTENTIAL MODIFIERS OF DISEASE RESPONSE. R T Riley4, K A Voss1, S Kumagai2, Y Sugita-Konishi2 and R P Sharma3. 1USDA-ARS, Athens, GA; 2National Institute of Infectious Diseases, Tokyo, Japan; 3University of Georgia, Athens, GA.

4:10 GENERAL DISCUSSION.

WEDNESDAY AFTERNOON, MARCH 17
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS 208-210

WORKSHOP SESSION: ENVIRONMENTAL JUSTICE; SOCIOECONOMIC INEQUITIES AND POPULATIONS AT RISK

Sponsored By: The Epidemiology Specialty Section and the Committee on Public Communications

Chairperson: Robert Snyder, Rutgers University, Piscataway, NJ

It has been recognized by minority groups across the nation that many of their communities contain potentially polluting industries which utilize chemicals or treat chemical wastes, develop natural resource, engage in developing or testing weapons, etc. The communities, sensing potential adverse impacts on their health, have appealed to the federal government for help and one response has been the Environmental Justice: Partnerships for Communication program established by NIEHS. The grant program supports studies aimed at determining whether the claims of impacts on health of the people in these communities can be substantiated via environmental health research. There are currently 12 research grants funded (approx. $3 million) by the NIEHS to perform community generated research, usually with the help of a university-based research group, aimed at evaluating the impact of local industry on public health. The active participation of stakeholders in the development and performance of research provides new opportunities for interactions and mutual understanding between academics and neighborhood occupants. We will discuss research strategies, environmental contributions to asthma, health effects of PCB's, chemical exposure to migrant farm workers, and role of the community in developing research proposals. (Supported by ES07723)

#1430 1:30 ENVIRONMENTAL JUSTICE: SOCIOECONOMIC INEQUITIES AND POPULATIONS AT RISK. R Snyder. Environmental and Occupational Health Sciences Institute and Rutgers University, Piscataway, NJ.

#1431 1:40 THE COMPLEX INTERACTION OF POVERTY, POLLUTION AND HEALTH STATUS. K Olden. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#1432 2:05 ENVIRONMENTAL JUSTICE AND HEALTH: OVERVIEW OF RESEARCH QUESTIONS, CONCEPTS AND METHODS. S Wing. Department of Epidemiology, School of Public Health, University of North Carolina, Chapel Hill, NC. Sponsor: R Snyder.
#1433 2:30  EPIDEMIOLOGICAL & EXPOSURE ASSESSMENT STUDIES OF ASTHMA & LUNG DISEASE IN CHILDREN IN BORDER TOWNS.  M D Lebowitz1, G Stephen1, C McRill1, M K O'Rourke1, T Flood6, M Mack2, C Rosales2, L Ortega2, I Titelbaum2, Y Canuso4 and R Navarro5.  1University of Arizona, Tucson, AZ; 2Arizona Department of Health (ADHS); 3Nogales School District, AZ; 4Stoneman School District, AZ; 5Son. Sec. Salud Publica, Hermosillo, Son., Mexico; AZ-Son. Binat'l Councils. Sponsor: R Snyder.

#1434 2:55  INTEGRATING RESEARCH INTO THE COMMUNITY-HEALTH EFFECTS OF PCBs IN A NATIVE AMERICAN POPULATION.  D O Carpenter1, K Cook1, K Jock1, K T Aracy1 and F Lickers2.  1University at Albany School of Public Health, Albany, NY; 2Mohawk Nation at Akwesasne, Hogansburg, NY. Sponsor: R Snyder.

#1435 3:20  CHEMICAL EXPOSURE AMONG SEASONAL AND MIGRANT FARMWORKERS: COMMUNITY-BASED EPIDEMIOLOGY.  S A Quarant and T A Acurty.  Wake Forest University School of Medicine, Winston-Salem, NC. Sponsor: R Snyder.


4:10  GENERAL DISCUSSION.

WEDNESDAY AFTERNOON, MARCH 17
1:30 PM - 4:30 PM  ERNEST N. MORIAL CONVENTION CENTER ROOM 207  PLATFORM SESSION: TCDD

Chairpersons: Michael S. Denison, University of California, Davis, CA and Michael J. Santostefano, US EPA, NHEERL, Research Triangle Park, NC

#1437 1:30  REGULATION OF SUBCELLULAR LOCALIZATION OF THE ARYL HYDROCARBON RECEPTOR (AhR).  C A Richter1, M Hannink1 and D E Tillitt2.  1University of Missouri, Columbia, MO; 2Environmental and Contaminants Research Center, Columbia, MO. Sponsor: M S Denison.

#1438 1:45  OMEPRAZOLE AND RELATED BENZIMIDAZOLES ARE AN RECEPTOR LIGANDS.  M S Denison, M G Winters, J I Lam and D M Phelan.  Department of Environmental Toxicology, University of California, Davis, CA.

#1439 2:00  ACQUIRED RESISTANCE TO TCDD-MEDIATED SUPPRESSION OF ESTROGEN-DEPENDENT MCF-7 TUMOR GROWTH.  J F Gierthy1,2, J A Bennett2, B C Spink,2 D C Spink1,2, K F Arcaro1,2 and D D Vakharia1. 1School of Public Health, State University of New York at Albany, Albany, NY; 2Wadsworth Center, New York State Department of Health, Albany, NY; 3Department of Surgery, Albany Medical College, Albany, NY.

#1440 2:15  DIFFERENCES IN LOCALIZATION OF TCDD IN CENTRIBULAR AND PERIPORTAL HEPATOCYTES GIVE INSIGHT INTO THE MECHANISM OF GENE EXPRESSION.  M J Santostefano1, J Blanton2, V E Richardson3, S Alcase2, K O Lindros3 and L S Birnbaumen.  1Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 2US EPA, NHEERL/ETD, Research Triangle Park, NC; 3National Public Health Institute, Helsinki, Finland.

#1441 2:30  TCDD AND DES INHIBIT FETAL THYMOCYTE DEVELOPMENT IN VITRO BY DISTINCTLY DIFFERENT MECHANISMS AS SHOWN BY STUDIES OF BCL-2 TRANSGENIC MICE.  Z-W Lai1, N C Fiore1, P J Hahn1, T A Gasienski1 and A E Silverstein1.  1Department of Microbiology and Immunology, 2Department of Radiation Oncology, SUNY Health Science Center, Syracuse, NY; 3Environmental Health Science Center, Department of Environmental Medicine, The University of Rochester School of Medicine, Rochester, NY.

#1442 2:45  CELL PROLIFERATION IN THE LIVERS OF FEMALE RATS CHRONICALLY EXPOSED TO BOTH 2,3,7,8-TCDD AND BDL-ESTRADIOL.  N J Walker1, M E Wyde1, S R Eldridge1 and G W Lucier1.  1National Institute of Environmental Health Sciences, Research Triangle Park, NC; 2Pathology Associates International, Frederick, MD.

#1443 3:00  CLARIFICATION OF DIFFERENTIAL TOXICITY OF TCDD TOWARD C-SRC KNOCKOUT AND WILD-TYPE MICE.  D Y Dunlap, M J Moreno-Oliva, Z Wu, H Nagashima, D M Tessier, M E Hansen and F Matsumura.  Department of Environmental Toxicology, University of California, Davis, CA.

#1444 3:15  THE EFFECTS OF TCDD ON THE ACTIVATION OF OVA-SPECIFIC DOI 1.10 TRANSGENIC T CELLS IN ADAPTIVELY-TRANSFERRED MICE.  M Shepherd and N I Kerkvliet.  Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#1445 3:30 VARIATION IN AH RECEPTOR EXPRESSION AND CYTOCHROME P450 INDUCIBILITY IN A DIOXIN-EXPOSED POPULATION. S A Masters1, J A Grassman1, C R Miller1, D L Spencer1, D Jung2, L Edler3, L L Needham4 and G W Lucier1. 1NEHS, Research Triangle Park, NC; 2University of Mainz, FRG; 3German Cancer Research Center, Heidelberg, FRG; 4CDC, Atlanta, GA.

#1446 3:45 HUMAN DIOXIN EXPOSURE ASSESSMENT BASED ON BLOOD ANALYSES: EXPOSURE DIFFERENCES ATTRIBUTABLE TO GENDER, AGE, DIET and COUNTRY. O Päpke1 and A J Schecter2. 1ERGO Forschungsgesellschaft mbH, Hamburg, Germany; 2State University of New York (SUNY) Binghamton, Binghamton NY.

#1447 4:00 EARLY RESULTS FROM A DIOXIN GENOME PROJECT. R S Thomas1, D R Rank2, S Jovanovich3, J B Hogensche1, G M Zastro1, K M Carr1, and C A Bradfield1. 1McArdle Laboratory for Cancer Research, University of Wisconsin Medical School, Madison, WI; 2Molecular Dynamics Inc., Sunnyvale, CA.

#1448 4:15 DIOXIN INTAKE FROM FOOD IN THE UNITED STATES GENERAL POPULATION. A J Schecter1, P Kramer2, K Boggess2, J Olson3 and A G Silver1. 1State University of New York (SUNY) Binghamton, Binghamton, NY; 2Midwest Research Institute, Kansas City, MO; 3SUNY Buffalo, Buffalo, NY.

WEDNESDAY AFTERNOON, MARCH 17
1:30 PM - 4:30 PM
ERNST N. MORIAL CONVENTION CENTER ROOM 206
POSTER DISCUSSION SESSION: MITOCHONDRIA IN APOPTOSIS

Chairpersons: Anna-Liisa Nieminen, Case Western Reserve University, Cleveland, OH and Kendall B. Wallace, University of Minnesota, Duluth, MN

Displayed: 1:30 PM - 4:30 PM
Discussed: 2:30 PM - 4:30 PM

#1449 DECREASED INTRACELLULAR ZINC LEVELS ALTER MITOCHONDRIAL MEMBRANE FUNCTION AND INCREASE CASPASE-3 ACTIVITY IN HL-60 CELLS. J Y Duffy1, C M Miller1, G L Rutschilling1, G M Ridder1, M S Clegg2, C L Keen2 and G P Daston1. 1Procter & Gamble Company, Cincinnati, OH; 2Department of Nutrition, University of California, Davis, CA.

#1450 APOPTOSIS IN CELLS LACKING MITOCHONDRIAL DNA. J Cai, S Jiang, D C Wallace and D P Jones. Department of Biochemistry and Center of Molecular Medicine, Emory University School of Medicine, Atlanta, GA.

#1451 STUDY OF APOPTOSIS IN THYMOCYTES OBTAINED FROM G-GLUTAMYL TRANSPEPTIDASE (GGT) DEFICIENT KNOCKOUT MICE. Y Will1, R S Kaetzel2, M Lieberman3 and D J Reed1. 1Department of Biochemistry and Biophysics and 2Toxicology Program, Oregon State University, Corvallis, OR; 3Department of Pathology, Baylor College of Medicine, Houston, TX.

#1452 MITOCHONDRIAL DEPOLARIZATION IS AN EARLY EVENT IN PHOTODYNAMIC THERAPY-INDUCED APOPTOSIS IN CHO CELLS. A-L Nieminen1, S R Rohr1, K J Mann2 and N L Oleinick2. Departments of 1Anatomy and 2Radiation Oncology, School of Medicine, Case Western Reserve University, Cleveland, OH.

#1453 MITOCHONDRIAL DEPOLARIZATION PRECEDES BAX TRANSLLOCATION TO MITOCHONDRIA. K M Heikonen1, P D Pichiele1, M B Bhat1, J J Ma2 and A-L Nieminen1. Departments of 1Anatomy, 2Physiology and Biophysics, School of Medicine, Case Western Reserve University, Cleveland, OH.

#1454 INDUCTION OF APOPTOSIS BY CYCLOSPORINE A IN RAT HEPATOCYTES. S Grub, E Persohn, W E Trommer1 and A Wolf. Novartis Pharma AG, Experimental Toxicology, Basel, Switzerland; 1University of Kaiserslautern, Germany. Sponsor: A De Brugerolle de Faitzinnette.

#1455 LEUKOTOXIN DIOL IS A POTENT AND SPECIFIC INDUCER OF THE MITOCHONDRIAL PERMEABILITY TRANSITION. M F Sistrom1, J C Yang2, B D Hammock1 and G A Cortopassi2. 1Entomology & Environmental Toxicology, 2Molecular Biosciences, University of California at Davis, Davis, CA.

#1456 SUBCHRONIC DOXORUBICIN ADMINISTRATION INCREASES MITOCHONDRIAL-MEDIATED CELL INJURY BY CALCIUM IONOPHORES. S Zhou1, L J Heller2, J A Smith2 and K B Wallace1. 1Department of Biochemistry & Molecular Biology and Toxicology Graduate Program; 2Department of Medical and Molecular Physiology, University of Minnesota School of Medicine, Duluth, MN.
SOCIETY OF TOXICOLOGY
38th Annual Meeting

#1457 ACETAMINOPHEN AND ITS NONHEPATOTOXIC REGIOISOMER, INDUCE CELL DEATH BY ANOMALOUS APOPTOSIS IN VIVO AND IN VITRO. R H Pierce1, R P Tonge2, W Chen2, N Fausto3, S D Nelson2 and S A Bruschi1. Departments of 1Pathology and 2Medicinal Chemistry, University of Washington, Seattle, WA.

#1458 ROTENONE-INDUCED APOPTOSIS IN LIVER CELLS: INVOLVEMENT OF THE MITOCHONDRIAL MEMBRANE PERMEABILITY TRANSITION (MPT). J S Isenberg and J E Klaunig. Division of Toxicology, Department of Pharmacology & Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1459 OXIDATIVE STRESS IS A MEDIATOR OF DOPAMINE AND CYANIDE INDUCED NEURONAL APOPTOSIS. D C Jones, P G Gunasekar, J L Borowitz and G E Isom. Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

WEDNESDAY AFTERNOON, MARCH 17
130 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM R09
POSTER DISCUSSION SESSION: AIRBORNE PARTICULATE MATTER: IN VITRO TOXICITY
Chairpersons: Kevin E. Driscoll, Procter & Gamble Pharmaceuticals, Cincinnati, OH and Daniel L. Costa, US EPA, Research Triangle Park, NC
Displayed: 1:30 PM - 4:30 PM
Discussed: 2:30 PM - 4:30 PM

#1460 EFFECTS OF ATMOSPHERIC PARTICULATE MATTER ON BASAL AND BACTERIA-INDUCED DEGRANULATION OF HUMAN PERIPHERAL BLOOD LEUKOCYTES. L A Zusman, B J Turpin and E J Yarkow. Environmental and Occupational Health Sciences Institute, Rutgers University, Piscataway, NJ.

#1461 VANILLOID (CAPSAICIN) AND ACID SENSITIVE IRRITANT RECEPTORS UNDERLIE MOUSE STRAIN-SENSITIVITY TO PARTICULATE MATTER (PM). B Veronesi1, M Oortgiesen2, S A Simon1 and S Gavett1. 1National Health and Environmental Effects Research Laboratories, US EPA, Research Triangle Park, NC; 2Department Anesthesiology, Duke University Medical Center, Durham, NC.

#1462 PARTICULATE MATTER AND CHARGED SYNTHETIC POLYMER MICROSPHERE ANALOGUES ACTIVATE BRONCHIAL EPITHELIAL CELLS AND SENSORY NEURONS THROUGH CAPSAICIN AND ACID RECEPTORS. S A Simon1, M Oortgiesen1 and B Veronesi2. 1Department Anesthesiology, Duke University Medical Center, Durham, NC; 2US EPA, NHEERL, Research Triangle Park, NC.

#1463 PHYSICOCHEMICAL COMPONENTS OF PARTICULATE MATTER CONTRIBUT TO DIFFERENTIALLY TO INFLAMMATORY RESPONSES IN SENSORY NEURONS. M Oortgiesen1, S A Simon1 and B Veronesi2. 1Department Anesthesiology, Duke University Medical Center, Durham, NC; 2US EPA, NHEERL, Research Triangle Park, NC.

#1464 NUCLEAR FACTOR-KAPPA BETA (NF-KB) ACTIVITY IN RAT ALVEOLAR MACROPHAGES EXPOSED TO RESPIRABLE ORGANIC PARTICLES AND ANTIOXIDANTS. D Ufferfield1, G N Cosma1, H Gardner2 and V Vallyathan3. 1Department Environmental Health, Colorado State University, Fort Collins, CO; 2US Army Center for Environmental Health Research, Fort Detrick, MD; 3NIOSH, Morgantown, WV.

#1465 FREE RADICAL GENERATION BY WOOD SMOKE PARTICLES AND IN VITRO DNA DAMAGE. S S Leonard1, S Wang1, X Shi1, B S Jordan2, V Castranova1 and M A Dubick2. 1National Institute for Occupational Safety and Health, Morgantown, WV; 2US Army Institute of Surgical Research, San Antonio, TX.

#1466 LUNG CELL INJURY INDUCED BY DIESEL EXHAUST PARTICLES (DEP) IN VIVO AND IN VITRO: EFFECTS OF OZONE (O3) AS A CO-POLLUTANT. C M Madden, L A Dailey, D M Reilly and A J Ghio. US EPA, NHEERL, HSD, Research Triangle Park, NC.

#1467 MOBILIZATION OF IRON FROM SIZE-FRACTIONED COAL FLY ASH IN HUMAN AIRWAY EPITHELIAL (A549) CELLS. K R Smith1, A R Austr1, J M Veranth2, A A Hu2, J B Griffith2 and J S Lighty2. 1Department of Chemistry and Biochemistry, Utah State University, Logan, UT; 2Chemical & Fuels Engineering, University of Utah, Salt Lake City, UT.

#1468 TOXICITY OF COBALT-CONTAINING DUST FOR RAT TYPE II PNEUMOCYTES AND ALVEOLAR MACROPHAGES. G Roosens, P H Hoet, M Demedts and B Nemer. Laboratory of Pneumology, Unit of Toxicology, KU Leuven, Leuven, Belgium.
OXAZOLONE-INDUCED ALLERGIC SKIN INFLAMMATORY RESPONSE IS PREDOMINATED BY MIXED PATTERNS OF CYTOKINE PRODUCTION AND NEUTROPHIL INFILTRATION. I Zhang and S S Tinkle. CDC/NIOSH, Morgantown, WV. Sponsor: M I Luster.

#1474 LARGERHANS CELL MIGRATION INDUCED IN MICE BY SODIUM LAURYL SULFATE REQUIRES INTERLEUKIN 1α. M Cumberbatch, R J Dearman and I Kimberly. Zeneca Central Toxicology Laboratory, Macclesfield, Cheshire, UK.

#1475 EVALUATION OF DENDRITIC CELLS FOR IN VITRO DETECTION OF SENSITIZING CHEMICALS. S Kerdine, H Labrec, J Bertoggio and M Pallardy. Immuno toxicology group, INSERM U461, Faculté de Pharmacie, Chatenay-Malabry, France.

#1476 EXAMINATION OF HUMAN PERIPHERAL BLOOD DERIVED DENDRITIC CELLS FOR USE AS ANTIGEN-PRESENTING CELLS IN AN IN VITRO LYMPHOCYTE PROLIFERATION ASSAY. C A Ryan, B C Hullete and G F Gerberick. The Procter & Gamble Company, Cincinnati, OH.

#1477 mRNA EXPRESSION BY CULTURED HUMAN BLOOD-DERIVED DENDRITIC CELLS: ASSOCIATION WITH SKIN SENSITIZATION POTENTIAL. I S Pichowski, M Cumberbatch, R J Dearman, D A Baskettet and I Kimberly. Zeneca Central Toxicology Laboratory, Macclesfield, Cheshire, UK; 2Unilever SEAC, Bedford, UK.

#1478 EVALUATION OF HUMAN IRRITANTS AND WEAK TO MODERATE SENSITIZERS USING A MODIFIED LLNA AND AN IRRITANCY/PHENOTYPING ASSAY. J M Valosen, B B Hayes, M D Howell, T S Menet, M R Woolkiser and B J Meade. 1National Institute for Occupational Safety and Health (NIOSH), Health Effects Laboratory Division, Morgantown, WV; 2Virginia Commonwealth University, Richmond, VA; 3West Virginia University, Morgantown, WV.

USE OF THE MURINE LOCAL LYMPH NODE ASSAY TO ASSESS THE RELATIVE SKIN SENSITIZATION POTENCY OF TWO PROTEIN COUPLING REAGENTS. J T Kozak, M Inlow, B D Naumann, T T Kawabata and R V House. 1IT Research Institute, Chicago, IL; 2Merck & Company, Inc., Whitehouse Station, NJ.
COMPARISON OF MURINE MODELS FOR THE IDENTIFICATION OF POTENTIAL CHEMICAL SENSITIZERS. M D Howell1,2, T S Manetz1,2 and B J Meade1. 1National Institute for Occupational Safety and Health, Health Effects Laboratory Division, Morgantown, WV; 2West Virginia University, Morgantown, WV; 3Virginia Commonwealth University, Richmond, VA.

EFFECT OF VEHICLE ON POTENCY ASSESSMENT IN THE LOCAL LYMPH NODE ASSAY. L J Lea1, D A Baskette1, R J Dearman1 and I Kimber2. 1Unilever Safety and Environmental Assurance Centre, Sharnbrook, England; 2Zeneca Central Toxicology Laboratory, Macclesfield, England.

SEROPREVALENCE OF NATURAL RUBBER LATEX-SPECIFIC IgE ANTI BODY IN NON-HEALTHCARE WORKERS. R E Biagioni1, D M Lewis2, T A Bledsoe3, B A MacKenzie1, S A Robertson1 and L E Pinkerton2. 1DHHS/PHS/CDC/NIOSH, NIH/DBS; 2DSHEFS, Cincinnati, OH; 3DRDS, Morgantown, WV.

MURINE IMMUNE RESPONSES TO NATURAL RUBBER LATEX PROTEINS. M R Woolhiser1,2, A E Munson1 and B J Meade1. 1National Institute for Occupational Safety and Health/Health Effects Laboratory Division, Morgantown, WV; 2Medical College of Virginia Campus of VCU, Richmond, VA.

TYPE I HYPERSENSITIVITY TO LATEX AMONG GLOVE MANUFACTURING WORKERS IN MALAYSIA. M Shahnaz1, B A Nasuruddin1, T Leakekos2, V C C Lam2 and W Truscott2. 1Institute for Medical Research, Kuala Lumpur, Malaysia; 2Safeskin Corporation, Ipoh, Malaysia/San Diego, CA.


REDUCED PROINFLAMMATORY CYTOKINES IN FEED RESTRICTED RATS EXPOSED TO HOUSE DUST MITTE ANTIGEN. W Dong1, F W Kari2, M J K Selgradel and M I Gilmour1. 1Immunotoxicology Branch, US EPA, Research Triangle Park, NC; 2Transgenic Carcinogenesis Group, NIEHS, Research Triangle Park, NC.

COMPARISON OF ALLERGIC RESPONSES TO HOUSE DUST MITE (HDM) AMONG LOCALLY AND SYSTEMICALLY SENSITIZED SUCKLING, WEANLING AND ADULT BROWN NORWAY RATS. L G Immerson1,2, M I Gilmour2, D W Winsett2 and M J Selgrad1. 1North Carolina State University, Raleigh, NC; 2US EPA, NHEERL, ETD, Research Triangle Park, NC.

A FLOW CYTOMETRIC METHOD TO SCREEN FOR BERYLLIUM SENSITIZATION. A J Jabbour1, J A Hill1, R A Ponce1, K B Ertell1, T J Kavanagh1, L S Newman1, T K Takaro1 and E M Faustman1. 1Consortium for Risk Evaluation with Stakeholder Participation, University of Washington, Seattle, WA; 2National Jewish Medical and Research Center, Denver, CO.

AN EVALUATION OF GUINEA PIG HYPERSENSITIVITY TESTS FOR ABILITY TO DETECT SYSTEMIC HYPERSENSITIVITY POTENTIAL OF DRUGS. J L Weaver1, D Stoten2 and K L Hastings3. 1Division of Applied Pharmacology Research; 2Division of Antiviral Drug Products; and 3Division of Special Pathogen and Immunologic Drug Products, Center for Drug Evaluation and Research, US Food and Drug Administration, Rockville, MD.

TH1/TH2 PHENOTYPE OF HUMAN β-LACTAM SPECIFIC LYMPHOCYTES IN IMMEDIATE OR DELAYED HYPERSENSITIVITY REACTIONS. H Lescro1, I Gaspard1, N Bachtot1, M T Guinepoin2, J Lauren2, H Azouri-Tannous2, S Kerdine1 and M Pallardy1. 1INSERM U 461, Faculté de Pharmacie Paris Sud, France; 2Hôpital de l'Institut Pasteur, Paris, France; 3Université Saint Joseph, Beyrouth, Lebanon.

INTERLEUKIN-4 POTENTIATES IL-2-INDUCED HUMAN PENICILLIN-SPECIFIC CD4+ T CELLS PROLIFERATION THROUGH REGULATION OF CYCLIN-DEPENDENT KINASE INHIBITORS. I Gaspard1, D Blanchard2, A Vazquez2, M Pallardy1 and H Lescro1. 1INSERM U 461, Châtenay-Malabry, France; 2INSERM U 131-IPSC, Clamart, France.

HUMORAL IMMUNE RESPONSE TO A SEVOFLURANE DEGRADATION PRODUCT IN THE GUINEA PIG FOLLOWING INHALATION EXPOSURE. C K Begay, R C Lind, X H Zheng and A J Gandolfi. Department of Anesthesiology, University of Arizona, Tucson, AZ.

EVALUATION OF BENZO|APYRENE IN THE NZBWF1 MOUSE MODEL OF AUTOIMMUNITY. C D Booker, G C Llewellyn, J W Parrett and K L White, Jr Virginia Commonwealth University, Richmond, VA.
ACCELERATION OF AUTOIMMUNITY BY THREE CHLORINATED PESTICIDES WITH ESTROGENIC EFFECTS. S M Roberts and J Schiffenbauer. University of Florida, Gainesville, FL.

MULTIPLE IMMUNE FUNCTIONS IN RATS FED ECHINACEA. J H Exon and B H South. Department of Food Science and Toxicology, University of Idaho, Moscow, ID.

ORAL EXPOSURE TO BUTOXACETIC ACID (BAA) DOES NOT MIMIC THE EFFECTS OF ITS PARENT COMPOUND, BUTOXYETHANOL (BE), ON SYSTEMIC IMMUNE RESPONSES. P Singh, S Zhao and B L Bleylock. Division of Toxicology, College of Pharmacy and Health Sciences, Northeast Louisiana University, Monroe, LA.


FUMONISIN ALTERS MACROPHAGE ACTIVATION AS MEASURED BY LUMINOLO-DEPENDENT CHEMILUMINESCENCE. S Conkin1,2, K L Ponce1, A J Cooley2 and R D Schultz1,2, 1Environmental Toxicology Center; 2Department of Pathobiological Sciences, School of Veterinary Medicine, University of Wisconsin - Madison, Madison, WI.

PARADOXICAL IMMUNOMODULATORY EFFECTS IN α-CD3/α-CD28-STIMULATED PRIMARY SPLENIC AND THYMIC T-LYMPHOCYTES FOLLOWING ACUTE TGF-β1 EXPOSURE IN VITRO. S C McKarns and N E Kaminski. Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.


SUBCHRONIC ORAL TOXICITY OF THIODIGLYCOL IN RATS. R A Angerhofer, M W Michie and G J Leach. U S Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD.

PRECLINICAL TOXICITY STUDIES OF THE PHOSPHODIESTERASE IV INHIBITOR CI-1018 IN RATS. L A Dethloff, D G Pegg and A L Metz. Pathology and Experimental Toxicology, Parke-Davis Pharmaceutical Research, Warner-Lambert Company, Ann Arbor, MI.

PRECLINICAL TOXICOLOGY PROFILE OF CI-1012 IN RATS. D G Pegg, L A Dethloff and K M Walsh. Pathology and Experimental Toxicology, Parke-Davis Pharmaceutical Research, Warner-Lambert Company, Ann Arbor, MI.

SETTING INVENTORY LIMITS OF CHEMICALS FOR EMERGENCY PLANNING, HAZARD ASSESSMENT, OR SAFETY ANALYSIS. D K Craig. Westinghouse Safety Management Solutions, Inc., Aiken, SC.

TWO-WEEK CONTINUOUS INTRAVENTICOUS INFUSION OF PROBENECID IN DOGS. L A Dostal1, S C Groom2, D A Manca2, R M Walker2 and N J Graftmans2. Parke-Davis Pharmaceutical Research, Division of Warner-Lambert Company, 1Ann Arbor, MI and 2Mississauga, Ontario, Canada.

SUB-ACUTE EFFECTS OF CONTINUOUS INTRAVENTICOUS INFUSION OF PROBENECID IN RATS FOR 2 WEEKS. D A Manca1, L E Lillie1, R M Walker1, S C Groom1, N J Graftman1 and L A Dostal2. Parke-Davis Pharmaceutical Division, Warner-Lambert Company, Mississauga, Ontario, Canada and 2Ann Arbor, MI.


EFFECT OF BENZOYL PEROXIDE ON SOLAR-SIMULATED UV RADIATION-INDUCED SKIN TUMOR FORMATION IN SKH1 albino hairless mice. L C Totman, R M Parker, E J Winkelman, P D Forber and J F Nash. Nonprescription Drug Manufacturers Association, Washington, DC; Primedica, Horsham, PA; SmithKline Beecham Consumer Healthcare, Parsippany, NJ; Procter & Gamble, Cincinnati, OH.


MONITORING CELLULAR TOXICITY WITH AN INDUCED CALCIUM LOAD. M K McMillian, L Li, P Cheung, W J Powers and M D Johnson. R W Johnson Pharmaceutical Research Institute, Raritan, NJ.


POLYCYSTIC KIDNEY DISEASE INDUCED IN F1 SPROUSE-DAWLEY RATS FED PARA-NONYLPHENOL IN A SOY-FREE CASEIN-CONTAINING DIET. J R Latendresse, K B Delacos, C C Weiss and R R Newbold. NCTR, Jefferson, AR; NIEHS, Research Triangle Park, NC.

COMPARISON OF FIVE COGNITIVE TESTS USED IN RODENT DEVELOPMENTAL NEUROTOXICITY STUDIES AFTER PERINATAL PHENYOIN AND METHIMAZOLE. W P Weisenburger, C L Kozak, A R Hagler and D S Chapin. Pfizer Inc., Drug Safety Evaluation Department, Groton, CT.


ONCE-DAILY DOSING DECREASES TOXICITY OF DAFTOMYCIN. F B Oleson, Jr, C L Berman, J B Kirkpatrick, K S Regan, J J Lai and F P Tally. Cubist Pharmaceuticals, Inc., Cambridge, MA; Consultant, Wayland, MA; WIL Research Laboratories, Ashland, OH.


EFFECT OF SINGLE SUBCUTANEOUS DOSES OF EXENDIN-4, AN ISOLATE FROM GILA MONSTER SALIVA, ON-CARDIOVASCULAR PERFORMANCE IN CYMONOMUS MONKEYS. M Misty\textsuperscript{1}, B Greenland\textsuperscript{1}, R A Hiles\textsuperscript{2} and K S Prickett\textsuperscript{2}. \textsuperscript{1}Oread, Inc., Farmington, CT; \textsuperscript{2}Amylin Pharmaceuticals, Inc., San Diego, CA.

SUBCHRONIC TOXICITY AND TOXIKINETICS IN THE SPRAGUE-DAWLEY RAT OF EXENDIN-4, AN ISOLATE FROM GILA MONSTER SALIVA. J W Noveroske\textsuperscript{1}, D M Beaulieu\textsuperscript{1}, R A Hiles\textsuperscript{2} and K S Prickett\textsuperscript{2}. \textsuperscript{1}Oread, Inc., Farmington, CT; \textsuperscript{2}Amylin Pharmaceuticals, Inc., San Diego, CA.

SUBCHRONIC TOXICITY AND TOXIKINETICS IN THE CYMONOMUS MONKEY OF EXENDIN-4, AN ISOLATE FROM GILA MONSTER SALIVA. R A Hiles\textsuperscript{1}, K S Prickett\textsuperscript{1}, J W Noveroske\textsuperscript{2} and L J Duggan\textsuperscript{2}. \textsuperscript{1}Amylin Pharmaceuticals, Inc., San Diego, CA; \textsuperscript{2}Oread, Inc., Farmington, CT.


A NOVEL RISK ASSESSMENT/RISK MANAGEMENT OF CHILD EXPOSURE TO FIPRONIL GEL. W C McCormick\textsuperscript{1}, D F Crawford\textsuperscript{1} and S A Mobley\textsuperscript{2}. \textsuperscript{1}The Chlorox Company, Pleasanton, CA; \textsuperscript{2}Famen Agro, San Francisco, CA. Sponsor: A K Reddy.

EFFECTS OF P-GLYCOPROTEIN (P-GP) INHIBITION WITH LY335979 ON PACLITAXEL PHARMACOKINETICS AND PHARMACODYNAMICS WHEN COADMINISTERED TO BEAGLE DOGS. L L Truex, J J Zimmermann, J A Buben and V R Reddy. Lilly Research Laboratories, Eli Lilly and Company, Greenwood, IN.

SAFETY PROFILE OF THALIDOMIDE IN CD-1 MICE AND FISHER 344 RATS AFTER ORAL DOSING OVER 13 WEEKS. M Morgan\textsuperscript{1}, S Teo\textsuperscript{2}, N Trigg\textsuperscript{1}, M Shaw\textsuperscript{3} and S Thomas\textsuperscript{2}. \textsuperscript{1}ROW Sciences, Gaithersburg, MD; \textsuperscript{2}Celgene Corporation, Warren, NJ; \textsuperscript{3}Battelle, Columbus, OH.

TOXICITY OF PLURONIC\textsuperscript{®} F-68: A 14-DAY INTRAVENOUS TOXICITY STUDY IN HAN WISTAR RATS. D H Melich\textsuperscript{1}, K Owen\textsuperscript{2}, R M Lightfoot\textsuperscript{1}, S A Selway\textsuperscript{2} and J S Allen\textsuperscript{1}. \textsuperscript{1}Glaxo Wellcome Inc., Research Triangle Park, NC; \textsuperscript{2}Glaxo Wellcome Place Ware, Hertfordshire, UK.


THE EFFECT OF O\textsuperscript{6}BENZYLGUANINE PRETREATMENT ON BCNU-INDUCED PULMONARY TOXICITY. A C Smith\textsuperscript{1}, C J G Chang\textsuperscript{2}, R B Thompson\textsuperscript{2}, J E Tomaszewski\textsuperscript{2} and J G Page\textsuperscript{2}. \textsuperscript{1}National Cancer Institute, Bethesda, MD; \textsuperscript{2}Southern Research Institute, Birmingham, AL.

THE EFFECTS OF ORALLY ADMINISTERED CHOLESTAGEL AND LOVASTATIN IN BEAGLE DOGS. T P O'Neil\textsuperscript{1}, R Rapoza\textsuperscript{1}, D P Rosenbaum\textsuperscript{2}, E Zimmer\textsuperscript{1} and C B Spanhour\textsuperscript{1}. \textsuperscript{1}Chrysalis Preclinical Services-North America, Olyphant, PA; \textsuperscript{2}Celgene Pharmaceuticals, Waltham, MA.

AN ACUTE SAFETY AND TOLERANCE STUDY OF AN HERBAL-CONTAINING DIETARY SUPPLEMENT PRODUCT. E A Hyde\textsuperscript{1}, W E Bridson\textsuperscript{2} and J P Wise\textsuperscript{3}. \textsuperscript{1}Amway Corporation, Ada, MI; \textsuperscript{2}Covance Clinical Research Unit, Madison, WI; \textsuperscript{3}Madison Medical Center, Madison, WI. Sponsor: P Casterton.

AN EVALUATION OF THE POTENTIAL GENOTOXICITY OF DICHLORVS (DDVP); FINAL REPORT OF THE EXPERT PANEL. D Brusick\textsuperscript{1}, B K Bernard\textsuperscript{2}, J J Goodman\textsuperscript{3}, M Lott\textsuperscript{4}, P Portoghese\textsuperscript{5}, B M Wagner\textsuperscript{6} and C Weil\textsuperscript{7}. \textsuperscript{1}Covance Labs, Vienna, VA; \textsuperscript{2}SRA Intl., Washington, DC; \textsuperscript{3}Michigan State University, East Lansing, MI; \textsuperscript{4}University Degli Studi di Padova, Padova, Italy; \textsuperscript{5}University Mina, Minneapolis, MN; \textsuperscript{6}New York University, New York, NY; \textsuperscript{7}Retired.


<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1540</td>
<td>USE OF ARTEMIS II, AN ON-LINE DATA CAPTURE AND REPORTING SOFTWARE, ON</td>
<td>C Parent et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>PRE-CLINICAL TOXICITY STUDIES. C Parent et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1541</td>
<td>EFFECTS OF DIETARY LEAD ACETATE ON PLASMA MELATONIN LEVELS IN CHICKS.</td>
<td>W E Donaldson et al.</td>
<td>N. Carolina State University, Raleigh, NC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>University of Texas Health Science Center, San Antonio, TX.</td>
</tr>
<tr>
<td>#1542</td>
<td>EFFECTS OF SEX STEROID REPLACEMENT AND L-DOPA TREATMENT ON LEAD</td>
<td>M J J Ronis et al.</td>
<td>Department of Pediatrics, University of Arkansas for Medical Sciences and Arkansas Children's Hospital Research Institute, Little Rock, AR.</td>
</tr>
<tr>
<td></td>
<td>TOXICITY IN THE DEVELOPING RAT. M J J Ronis et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1543</td>
<td>ESTIMATION OF CUMULATIVE LEAD RELEASES (LEAD FLUX) FROM THE MATERNIAL</td>
<td>M J Korsch et al.</td>
<td>Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>SKELETON DURING PREGNANCY AND LACTATION. M J Korsch et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1544</td>
<td>STRUCTURAL AND MATHEMATICAL MODEL OF THE REGULATION OF PROTEIN KINASE</td>
<td>S M Koenzenko et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>C BY LEAD AND CALCIUM. S M Koenzenko et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1545</td>
<td>PKC DOES NOT MEDIATE THE EFFECTS OF LEAD ON THE VITAMIN D-DEPENDENT</td>
<td>D A Cory-Slechta et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>PRODUCTION OF OSTEOCALCIN. D A Cory-Slechta et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1546</td>
<td>CHRONIC LEAD INTOXICATION MAY CONTRIBUTE TO OSTEOPOROSIS. J E Pazzas</td>
<td>D A Cory-Slechta et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1547</td>
<td>CONTRIBUTION OF LEAD FROM FORMULA AND FOOD TO LEAD IN BLOOD AND URINE</td>
<td>N. J. W. H. Gwiazda et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>OF NEWBORN INFANTS AND RELATIONSHIP TO SKELETAL MOBILIZATION. B L</td>
<td>N. J. W. H. Gwiazda et al.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gulan et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1548</td>
<td>THE USE OF LEAD ISOTOPES TO IDENTIFY HOUSEHOLD SOURCES OF LEAD</td>
<td>R. H. Gwiazda and R. R. Smith.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>EXPOSURE. R. H. Gwiazda and R. R. Smith.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1549</td>
<td>SYSTEMATIC EVALUATIONS OF PLASMA Pb LEVELS OVER TIME IN ENVIRONMENTALLY-</td>
<td>M. S. Joel et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>Pb EXPOSED SUBJECTS. C. S. Joel et al.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1550</td>
<td>EFFECTS OF SUCCIMER ON THE DIURESIS OF ESSENTIAL METALS IN A PRIMATE</td>
<td>D. Woolard et al.</td>
<td>Institute of Chemical Toxicology, Wayne State University, Detroit, MI.</td>
</tr>
<tr>
<td></td>
<td>MODEL OF CHILDHOOD Pb POISONING. D. Woolard et al.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
#1551  CHANGES IN BLOOD LEAD CONCENTRATION AND ISOTOPE RATIO IN SUCCESSIVE HUMAN PREGNANCIES. W I Manton1, C A Angle2 and M J Inskip3. 1University of Texas at Dallas, Richardson, TX; 2University of Nebraska Medical Center, Omaha, NE; 3Environmental Health Directorate, Ottawa, Ontario, Canada.

#1552  LEAD EXPOSURE IN CHILDREN FROM URBAN AREAS IN REGION LAGUNERA, MEXICO. G G Garcia-Vargas1, M Rubio-Andrade1, L M Del Razo-Jiménez2, V Borja-Aburto2, E Vera2 and M E Cebrian2. 1Facultad de Medicina, UJED, Gomez Palacio, Dgo. 2Seccion de Toxicologia Ambiental, CINVESTAV-IPN, Mexico, D.F.

#1553  EQUILIBRIUM ADSORPTION OF LEAD IN WATER BY TRIQUETHALMED SEMENTITE CLAY. C L Ake, K Mayura, H J Huebner, G R Bratton and T D Phillips. Faculty of Toxicology, Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.

#1554  SOIL CLEANUP AND OTHER PREVENTION STRATEGIES FOR LEAD: WHAT DO WE KNOW ABOUT THEIR EFFECTIVENESS FOR REDUCING BLOOD LEAD LEVELS? R E Grissem and J S Sutten. Agency for Toxic Substances and Disease Registry (ATSDR), Atlanta, GA.

#1555  PORPHYRIN PROFILES AND CHELATOR CHALLENGE RESPONSE AFTER METHYL MERCURY EXPOSURE IN VOLES. K T Rummel1, B M Adair1, G P Cobb1, J S Woods2 and M J Hooper1. 1The Institute of Environmental and Human Health/Texas Tech University, Lubbock, TX; 2University of Washington, Seattle, WA.

#1556  DIAGNOSTIC USE OF 2,3-DIMERCAPTO-1-PROPANE SULFONATE (DMPS) TO ASSESS MERCURY EXPOSURE. G M Bogdan1, H V Apostolos2, M M Apostolos2, K M Hurhill1 and R C Darl1. 1Rocky Mountain Poison and Drug Center, Denver, CO; 2Department of Molecular and Cellular Biology, University of Arizona, Tucson, AZ.

#1557  EFFECTS OF 2,3-DIMERCAPTO-1-PROPANE-SULFONATE (DMPS) ON TISSUE AND URINE MERCURY (Hg) AND PORPHYRIN LEVELS IN METHYL MERCURY-EXPOSED RATS. S D Pingree, P L Simmonds and J S Woods. Department of Environmental Health, University of Washington, Seattle, WA.

#1558  EFFECTS OF BILIARY LIGATION AND MODULATION OF GSH-STATUS ON THE RENAL AND HEPATIC DISPOSITION OF INORGANIC MERCURY IN RATS. R K Zalups1, D W Barfuss2 and L H Lash3. 1Mercer University School of Medicine, Macon, GA; 2Georgia State University, Atlanta, GA; 3Wayne State University School of Medicine, Detroit, MI.

#1559  SELECTIVE ACTIVATION WITHIN THE MAPK PATHWAY BY Hg(II). K D Turney, A R Parrish and A J Gandolfi. Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1560  INHIBITION OF NF-κB DNA BINDING BY MERCURIC ION (Hg2+): EFFECTS OF THIOL VERSUS NON-THIOL REDUCTANTS ON Hg2+ INHIBITORY CAPACITY. F J Dieguez-Acuna and J J Woods. Department of Environmental Health, University of Washington, Seattle, WA.

#1561  ACCUMULATION OF MERCURY AND ITS EFFECT ON ANTIOXIDANT ENZYMES IN BRAIN, LIVER and KIDNEYS OF MICE. S Hussain, A Atkinson, A T Khan, S Thompson, O Clark, S Ali and T Graham. College of Veterinary Medicine, Nursing & Allied Health, Tuskegee University, Tuskegee, AL.

#1562  GENDER AND TISSUE SPECIFIC CHANGES IN GLUTATHIONE AND THE EXPRESSION OF THE CATALYTIC AND REGULATORY SUBUNIT OF GLUTAMATECSTEINE LIGASE IN MICE EXPOSED TO METHYL MERCURY. D Diaz, C C White, C M Krejsa and T J Kavanagh. Department of Environmental Health, University of Washington, Seattle, WA.

#1563  LUMINAL TRANSPORT OF DICYSTEINYMERCURY ((CYS)2-Hg) IN THE RABBIT PROXIMAL TUBULE. V T Cannon1, R K Zalups2 and D B Barfuss1. 1Georgia State University, Atlanta, GA; 2Mercer University School of Medical.. Macon, GA.

#1564  EFFECTS OF ALUMINUM ON IMMUNE PARAMETERS IN ORALLY-EXPOSED HUMANS. A Wicklund Glynn1,2, A Thuander1, A Johansson3, A Gräske1, I Gadhasson1 and A Schütz. 1The Swedish National Food Administration, Uppsala, Sweden; 2Department of Environmental Toxicology, Uppsala University, Uppsala, Sweden; 3Department of Pathology, The Swedish Agricultural University, Uppsala, Sweden; 4Department of Occupational and Environmental Medicine, Lund University, Lund, Sweden. Sponsor: L B Willett.
CHANGES IN SOME ASPECTS OF CARBOHYDRATE METABOLISM IN HEPATOPANCREAS OF FRESHWATER CRAB, BARYTELPHUSA GUERINI EXPOSED TO CHROMIUM COMPOUNDS. B Sridevi¹, P B Kishore², S Rajanna³, B Rajanna³ and S L N Reddy³,
¹Osmania University, Hyderabad, India; ²Primary Health Center, Khammam, India; ³Department of Biology, Azcorn State University, Lerman, MS. Sponsor: D Desai et al.

CHROMIUM DISPOSITION IN RATS FOLLOWING CHRONIC EXPOSURE TO HEXAVALENT Cr IN DRINKING WATER. J E Sutherland¹, A Zhitkovich², T Kluz¹ and M Costa¹,
¹Department of Environmental Medicine, New York University School of Medicine, New York, NY; ²Department of Pathology, Brown University, Providence, RI.

EVALUATION OF EFFECTS OF SUBCHRONIC EXPOSURE TO POTASSIUM DICHLORATE (Cr-VI) AND CHROMIC CHLORIDE (Cr-III) ON TESTICULAR HISTOPATHOLOGY AND SPERM PARAMETERS IN MICE. H L Chen¹, M B Anderson², L B King¹ and W J George¹,
¹Department of Pharmacology; ²Department of Anatomy, Tulane University Medical Center, New Orleans, LA.

CHROMIUM(VI) INDUCES A HORMONE-INDEPENDENT ACTIVATION OF THE GLUCOCORTICOID RECEPTOR. R C Kaltreider, A M Davis and J W Hamilton. Dartmouth Medical School, Hanover, NH.

Ni(II) IN ALBINO VERSUS NORMALLY PIGMENTED XENOPUS EMBRYOS AFTER EXPOSURE TO 63NC12. F W Sunderman Jr¹, A Antonijevic¹, A H Varghese¹, D Kotzyova¹ and H Tjahve¹,
¹Medical School, University of Connecticut, Farmington, CT; ²Veterinary Medicine Faculty, Swedish University of Agricultural Sciences, Uppsala, Sweden.

NICKEL ACCUMULATION IN RAT PRIMARY HEPATOCYTE CULTURES. H Shimada¹, T Funakoshi², T Inoue¹ and S Kojima¹,
¹Department of Hygienic Chemistry, Faculty of Pharmaceutical Sciences, Kumamoto University, Kumamoto, Japan; ²Kyushu University of Nursing and Social Welfare, Tamana, Japan.

INTRACELLULAR CLEARANCE OF NICKEL COMPOUNDS: AN IMPORTANT DETERMINANT OF CARCINOGENIC POTENTIAL. G Lawrence¹, A Shipk¹, H Clewell¹, R Genity¹, J Gearhart¹,
¹The K.S. Crump Group, Inc., ICF Kaiser, Ruston, LA; ²Procter & Gamble, Cincinnati, OH.

TOXICITY OF DEPLETED URANIUM FRAGMENTS IN WISTAR RATS. F F Hahn, R A Guilmette and M D Hoover. Lovelace Respiratory Research Institute, Albuquerque, NM.

EFFECT OF 14 DAY Zinc CHLORIDE EXPOSURE ON TISSUE DISTRIBUTION OF ZINC IN RATS. O Clark, A Khan, A Atkinson, T Graham, S Thompson, S Hussain and S Ali. CVMNAH, Tuskegee University, Tuskegee, AL.

PRELIMINARY COMPARISON OF TWO SOIL METAL SURVEYS IN NEW ORLEANS. H W Mielke, M K Smith and C R Gonzales. Xavier University of Louisiana, New Orleans, LA.

EFFECT OF ORAL FRENOLIN-B TREATMENT ON ESSENTIAL TRACE ELEMENTS IN MALE RATS: RELATIONSHIP TO PROLIFERATIVE LESIONS IN SELECTED TISSUES. J D Bogden¹, S Han¹, F Kemp¹, R W Slator², D Serota², N P Milner, A Davidovich³ and D C Kassor³,
¹University of Medicine & Dentistry of New Jersey, Newark, NJ; ²MPI Research LLC, Mattawan, MI; ³Roche Vitamins Inc., Nutley, NJ.

WEDNESDAY AFTERNOON, MARCH 17
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION, EVE
Chairpersons: Mitchell Klausner, MatTek Corporation, Ashland, MA and Cheng C. Yao, Alcon Laboratories, Inc., Ft. Worth, TX
Displayed: 1:30 PM - 4:30 PM
Attended: 3:00 PM - 4:30 PM

EYE IRRITATION FROM CONSUMER PRODUCTS: COMPARISON OF HUMAN EXPERIENCE AND DRAIZE EYE TEST DATA. J Martinez¹, T Nusati²,
¹The Clorox Services Company, Pleasanton, CA; ²Risk Assessment and Toxicology Services, Inc., Cincinnati, OH.

DISTRIBUTION OF LEAD (Pb) AND TRANSETHYRETIN (TTR) IN HUMAN EYE. J W Eichenbaum¹ and W Zheng²,

#1579 13-WEEK FEEDING STUDY WITH AN AROMATIC DIAMINE IN ALBINO RATS. R. Valentine, J. W. Carver, S. R. Frame and G. S. Elliott. The DuPont Company, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.


#1581 EVALUATION OF CORNEAL DAMAGE USING CONFOCAL MICROSCOPY. G. L. Rutschilling1, D. A. Roberts1, R. Osborne1, G. M. Ridder1, B. Roysam2. 1Procter & Gamble Company, Cincinnati, OH; 2Renaulac Polytene Inc, Troy, NY. Sponsor: L. D. Lehman-McKeenan.

#1582 AN IN VITRO HUMAN CORNEAL MODEL FOR OCULAR IRRITATION TESTING. C. M. Griffith1, J. Xiong1, M. A. Watsky1 and R. Osborne1. 1University of Ottawa Eye Institute, Ottawa, ON, Canada; 2Department of Physiology and Biophysics, University of Tennessee Health Science Center, Memphis, TN. Sponsor: L. D. Lehman-McKeenan.

#1583 THE EPIOCULAR PREDICTION MODEL: A REPRODUCIBLE IN VITRO MEANS OF ASSESSING OCULAR IRRITANCY POTENTIAL. M. Klausner1, H. A. Sennott, B. Breyfogle, A. Makwana and J. Kubilus. MatTek Corporation, Ashland, MA.

#1584 COMPARATIVE CYTOTOXICITY OF MITOMYCIN C AND 5-FUOROURACIL IN IMMORTALIZED RABBIT CORNEAL ENDOTHELIAL CELLS. C. L. Tye, J. Podval, J. Kiehbauch, D. Edwards and J. C. Veitman. Research Toxicology Department, Alcon Laboratories, Inc., Fort Worth, TX.

#1585 REVIEW OF THE LONG-TERM IN-HOUSE USE OF AN IN VITRO TEST BATTERY FOR PREDICTING SEVERE OCULAR IRRITANTS. P. Botham and N. A. M. Hadfield. Zeneca Central Toxicology Laboratory, Macclesfield, Cheshire, UK. Sponsor: J. Kimber.


#1587 HISTOPATHOLOGY ASSOCIATED WITH OPAcity AND PERMEABILITY CHANGES IN BOVINE CORNEAS IN VITRO. J. W. Harbell1, H. A. Raabe1, M. G. Evans2 and R. D. Curren1. 1Institute for In Vitro Sciences, Inc., Gaithersburg, MD; 2Pathology Associates International, Frederick, MD.


#1589 CORNEAL THICKNESS AS A MEASURE OF CORNEAL HYDRATION IN THE BOVINE CORNEAL OPAcity AND PERMEABILITY (BCOP) ASSAY. P. L. Casterton1 and J. Swets2. 1Amway Corporation, Ada, MI; 2Calvin College, Grand Rapids, MI.

WEDNESDAY AFTERNOON, MARCH 17
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: REGULATORY POLICY

Chairpersons: Edward R. Ohanian, US EPA, NHEERL, Research Triangle Park, NC and Gregory L. Kedderis, CIIT, Research Triangle Park, NC

Displayed: 1:30 PM - 4:30 PM
Attended: 1:30 PM - 3:00 PM

TUMOR CLASSIFICATION FOR EVALUATION OF LONG-TERM RODENT BIOASSAYS. I
Linkov1, A Shagai khmetov1, R Wilson1,2 and G M Gray2. 1Department of Physics, Harvard University, Cambridge, MA; 2Harvard Center for Risk Analysis, Harvard School of Public Health, Boston, MA.

MONONUCLEAR CELL LEUKEMIA (MNCL) IN F-344 RATS: IMPLICATIONS FOR HUMAN CANCER RISK ASSESSMENT OF PHTHALATES AND OTHER NON-GENOTOXIC CHEMICALS. D J Caldwell. Exxon Biomedical Sciences, Inc., East Millstone, NJ.

CHRONIC BIOASSAYS FOR LIVER TUMORS IN B6C3F1 MICE USING IDEALIZED WEIGHT CURVES PRODUCED BY CONTROLLED FEEDING. J E Seng, E Horsley, W T Allaben and J E A Leakey. National Center for Toxicological Research, Jefferson, AR.

RODENT CANCER BIOASSAYS COULD BE TERMINATED AT 18 MONTHS. E Nestmann1, A Monro2, T Davies1, B Lynch1 and I Munro1. 1CanTox Inc., Consultants in Toxicology, Mississauga, ON, Canada; 2Pfizer, Inc., Sandwich, UK; 3 Pfizer Inc., Central Research, Groton, CT.

INTEGRATION OF CANCER AND NONCANCER RISK ASSESSMENT WITHIN A QUANTITATIVE FRAMEWORK OF UNCERTAINTY AND VARIABILITY. P S Price, R E Keenan. Ogden Environmental and Energy Service, Portland, ME.


CENTRO DE INFORMACION TOXICOLOGICA: A RETROSPECTIVE STUDY OF NINE YEARS OF SERVICE. O Torres-Alanis and L Garza-Ocañas. Centro de Información Toxicológica (Centro Antivenenos), Departamento de Farmacología y Toxicología, Fac de Medicina, Universidad Autonoma de Nuevo León, Col. Del Valle, Nuevo León, Mexico. Sponsor: D Acosta.

RISK COMMUNICATION REGARDING DIOXIN EXPOSURES TO INFANTS FROM MOTHER'S MILK: KEY UNCERTAINTIES RELATING TO STEADY STATE MODELING ASSUMPTIONS. B D Kerger1, G E Corbett2 and T L Copeland2. Health Science Resource Integration, Inc. (HSRI), 1Tallahassee, FL and 2Orange, CA.


RISK ASSESSMENT OF ATRAZINE, BENTAZON, DIBROMOCHLOROPROPANE, 1,2-DICHLOROPROPANE AND 1,3-DICHLOROPROPENE FOR DETERMINATION OF CALIFORNIA PUBLIC HEALTH GOALS IN WATER. R Tomar, D Rice, J Bankowska, J Polakoff, J Wisniewski, J Faust, M Di Bartolomeis and A Pan. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Pesticide and Environmental Toxicology Section, Berkeley and Sacramento, CA.


CALIFORNIA PUBLIC HEALTH GOALS FOR CADMIUM, CHROMIUM, INORGANIC MERCURY AND THALLIUM. L Iowa, D Morry and J Polakoff. California Environmental Protection Agency, Berkeley and Sacramento, CA.

CALIFORNIA PUBLIC HEALTH GOALS FOR 1,2-DICHLOROETHANE, 1,2-DICHLOROETHYLENE, HEXACHLOROCYCLOPENTADIENE, TOLUENE, 1,2,4-TRICHLOROBENZENE and TRICHLOROETHYLENE. D Ting, J Brown, T Parker, J Polakoff, D Rice and A Pan. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Berkeley and Sacramento, CA.


Society of Toxicology
38th Annual Meeting

Wednesday Afternoon, March 17
1:30 PM - 4:30 PM
Ernest N. Morial Convention Center
Exhibit Hall A

Poster Session: Carcinogenesis II

Chairpersons: Anthony B. DeAngelo, US EPA, NHEERL, Research Triangle Park, NC and Heather E. Kleiner, University of Texas, Smithville, TX

Displayed: 1:30 PM - 4:30 PM

Attended: 3:00 PM - 4:30 PM

#1607 Pathogenicity of Man-Made Vitreous Fibers After Long-Term Inhalation.
O Kamstrup1, J M G Davis2, A Elsheuq1, E E McConnell3 and J Chevalier4. 1Rockwell International A/S, Hedehusene, Denmark; 2Institute of Occupational Medicine, Edinburgh, Scotland; 3Tox Path, Inc., Raleigh, NC; 4Experimental Pathology Services, Mutenz, Switzerland.

#1608 Effects of 2-Year Inhalation Exposure to Glutaraldehyde in Rats and Mice. A P J M van Birgelen1, B J Chou2, R A Renne2, S L Grumbeim2, J Roycroft1, R Hailey1 and J R Burcher1. 1NIEHS, Research Triangle Park, NC; 2Battelle Northwest, Richland, WA.

#1609 High Dose Exposure to Dinitrotoluene Associated with Carcinogenic Effects in Humans? T Bruening1, C Chronz1, R Thier1, H M Böttl1, H Vetter2 and Y Ko2. 1Institute of Occupational Physiology at the University of Dortmund, Germany; 2Medical Policlinic, University of Bonn, Germany.


#1611 Carcinogenicity of Inhaled Butadiene Diepoxide. R F Henderson, F F Hahn, M G Ménache, E B Barr, S A Belinsky and J M Benson. Lovelace Respiratory Research Institute, Albuquerque, NM.

#1612 Molecular Dosimetry of N-7-Guanine DNA Adduct Formation in Mice and Rats Exposed to 1,3-Butadiene. H Koc1, N Y Tretyakova1, V E Walker2 and J A Swenberg1. 1Department of Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC; 2New York State Department of Health, Albany, NY.

#1613 Analysis of Mutations in HPRT cDNA of Splenic T-Lymphocytes from Mice Exposed by Inhalation to 1,3-Butadiene. Q Meng1, T Chen2, R H Heflich2 and V E Walker1. 1Wadsworth Center, New York State Department of Health, Albany, NY; 2National Center for Toxicological Research, Jefferson, AR.

#1614 Loss of Differentiation in the Phenotypically Altered Progeny of Alpha-Particle-Exposed Normal Human Bronchial Epithelial Cells. C H Kennedy1, J Tesfai2 and J F Lechner3. 1Biodynamics Institute & School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA; 2Lovelace Respiratory Research Institute, Albuquerque, NM; 3Karmanos Cancer Institute, Wayne State University, Detroit, MI. Sponsor: V L Wilson.

#1615 The Effect of Trichloroethylene Carcinogenic Metabolites, Trichloroacetic Acid (TCA) and Dichloroacetic Acid (DCA), on Peroxisomal Enzyme Activity and DNA Synthesis in Cultured Human Liver Cells. J L Everhart, D T Kurtz and J M McMillan. Department of Pharmacology, Medical University of South Carolina, Charleston, SC.

#1616 Is perchloroethylene (Perc) a Probable Carcinogen in Humans? L A Beyer1, B D Beck1, W E Maier2. 1Gradient Corporation, Cambridge, MA; 2Parke-Davis Pharmaceutical Research, Ann Arbor, MI.

#1617 Health Risk Assessment/Characterization of the Drinking Water Disinfection Byproduct Chloroform. M L Dourson and L Haber. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

#1618 Exposure of Japanese Medaka (Oryzias Latipes) Embryos to Benzene, Chloroform and Bromoform for Assessment of Carcinogenic Potential. W R Hartley1, A Thiagarajah1, L K Teuschler2, C Gennings3 and C Cubbison2. 1Tulane University Medical Center, New Orleans, LA; 2NCEA, US EPA, Cincinnati, OH; 3MVC, VCU, Richmond, VA. Sponsor: J C Lipcomb.

#1619 The Induction of Ablerrant Crypt Foci (ACF) in the Colon of Rodents Administered Trihalomethanes (THMs) in the Drinking Water. A B DeAngelo and M H George. US EPA, NHEERL, Research Triangle Park, NC.
#1620 AN EVALUATION OF THE POTENTIAL CARCINOGENICITY OF DICHLOROVOS (DDVP): FINAL REPORT OF THE EXPERT PANEL. B M Wagner1, B K Bernard2, S Cohen3, C Weil4, J J Goodman2 and L. McKinney5. 1New York University, New York, NY; 2SRA Intl., Inc., Washington, DC; 3University Nebraska Medical Center, Omaha, NE; 4retired, Pittsburgh, PA; 5Michigan State University, East Lansing, MI; 4Armed Forces Institute of Pathology, Washington, DC.


#1622 THE KEY RISK FACTORS IN DICHLOROMETHANE CARCINOGENICITY. P J Sherratt1, T Green2 and J D Hayes1. 1Biomedical Research Centre, University of Dundee, Ninewells Hospital and Medical School, Dundee, Scotland, UK; 2Zeneca Central Toxicology Laboratories, Macclesfield, England. Sponsor: E Lock.

#1623 THE EFFECTS OF AD LIBITUM (AL) OVERFEEDING AND MODERATE OR MARKED DIETARY RESTRICTION (DR) ON BODY WEIGHT, CARCASS COMPOSITION, CLINICAL PATHOLOGY AND DEGENERATIVE LESIONS IN CD-1 MICE. J B Coleman1, K P Keenan1, C L Baldwin1, K A Soper1, C M Hoe1, G Ballam2 and R Dixit1. 1Merck Research Laboratories, Department of Safety Assessment, West Point, PA; 2Purina Mills Inc., St. Louis, MO.

#1624 CHRONIC TOXICITY OF N-METHYL-PYRROLIDONE (NMP) IN A TWO-YEAR FEEDING STUDY WITH RATS. L A Malley1, G S Elliott1, T W Stone1, G L Kennedy1, R J Parod2, T J McCarthy2 and J C Griffiths2. 1The DuPont Company, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE; 2The NMP Producer’s Group, Washington, DC.

#1625 A 24-MONTH DIETARY CARCINOGENICITY AND TOXICITY STUDY OF MICROENCAPSULATED METHYL BROMIDE IN SD RATS. J J W M Mertens1, D A Banas2, S A Lewis3 and V J Piccirillo4. 1WIL Research Laboratories, Inc., Ashland, OH; 2Experimental Pathology Laboratories, Inc., Herndon, VA; 3Chemical Manufacturers Association, Arlington, VA; 4NPC, Incorporated, Sterling, VA.

#1626 ORAL BUCCAL AND TONGUE CARCINOGENESIS IN SENCAR MICE. T Kim, D M Ramos, J A Regezi and R H Kramer. Department of Stomatology and Anatomy, University of California, San Francisco, CA.

#1627 DETECTION OF TUMOR PROMOTING ACTIVITY OF TWO COMBINATION PESTICIDES (CHLORPYRIFOS 50% + CYPERMETHRIN 5% AND PROFENOS 40% + CYPERMETHRIN 4%) BY SHORT TERM IN VIVO BIOASSAY. E Murailimohan, N Ramesh, K S Pillai and P Balasubramaniam. Department of Toxicology, FIPPA, Puducherry, India.

#1628 A NOVEL ELECTROPHORETIC PATTERN OF MICROSMAL AND CYTOSOLIC POLYPEPTIDES FROM HEPATIC TUMORS IN RAINBOW TROUT. M W Roomi. Linus Pauling Institute, Oregon State University, Corvallis, OR.

#1629 KINETICS OF ABBERRANT CRYPT FOCI FORMATION IN MICE OF DIFFERING SUSCEPTIBILITY TO AZOXYMETHANE-INDUCED COLON TUMORIGENESIS. A Papanikolaou, Q-S Wang and D W Rosenberg. University of Connecticut, Storrs, CT.

#1630 DIFFERENTIAL EXPRESSION OF p16INK4a IN AZOXYMETHANE-INDUCED MOUSE COLON TUMORIGENESIS. Q-S Wang, A Papanikolaou, J Bu and D W Rosenberg. University of Connecticut, Storrs, CT.

#1631 IDENTIFICATION OF A CANDIDATE UPREGULATED GENE IN TRANSFORMED C3H10T1/2 MOUSE EMBRYO CELL LINES INDUCED BY CARCINOGENIC NICKEL COMPOUNDS. J Ramnath, A Verma and J R Landojph. Departments of Mol. Microbiol. and Immunol., Pathol. and Mol. Pharm. and Toxicol., USC/Norris Comprehensive Cancer Center, University of Southern California, School of Medicine and Pharmacy, Los Angeles, CA.

#1632 COMPARATIVE HEPATOCARCINOGENICITY OF HEXACHLOROBENZENE, PENTACHLOROBENZENE, 1,2,4,5- TETRACHLOROBENZENE AND 1,4- DICHLOROBENZENE: APPLICATION OF A MEDIUM-TERM LIVER FOCUS BIOASSAY AND MOLECULAR AND CELLULAR INDICES. D L Gustafson1, R S Thomas1, M E Long1, S A Benjamin2 and R S H Yang1. Center for Environmental Toxicology & Technology, Departments of Environmental Health and Pathology, Colorado State University, Fort Collins, CO.
#1633 ANTAGONISM OF HEPATIC PRENEOPLASTIC FOCI BY AN ARSENIC-CONTAINING CHEMICAL MIXTURE: ROLE OF APOPTOSIS. W A Port1, S A Benjamin2 and R S H Yang1. Center for Environmental Toxicology & Technology. Departments of 1Environmental Health and 2Pathology, Colorado State University, Fort Collins, CO.

#1634 DIETARY GLYCINE PREVENTS THE DEVELOPMENT OF LIVER TUMORS CAUSED BY THE PEROXYISOME PROLIFERATOR WY-14,643. R G Thurman1, M L Rose1 and R C Castley2. 1Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 2CIIT, Research Triangle Park, NC.

#1635 DIETARY GLYCINE INHIBITS THE GROWTH OF B16 MELANOMA TUMORS IN MICE. M L Rose1, J Madanc2, H Bunzendahli3 and R G Thurman1. 1Curriculum in Toxicology, Departments of 2Pharmacology and 3Surgery, University of North Carolina, Chapel Hill, NC.

#1636 TYROSINE AND PHENYLALANINE DEPRIVATION DECREASES B16BL6 MELANOMA CELL INVASION BY DECREASING PLASMINOGEN ACTIVATORS AND INCREASING PLASMINOGEN ACTIVATOR INHIBITOR-1. B A Pelayo and G G Meadows. Pharmacology and Toxicology Graduate Program and the Pharmaceutical Science Department, Washington State University, Pullman, WA.

#1637 GENISTEIN STIMULATES GROWTH OF MALE HUMAN PANCREATIC TUMOR CELLS IN VITRO. B D Lyn-Cook, G Hammons, Y Yan, E Blann and F Kadlubar. Division of Molecular Epidemiology, National Center for Toxicological Research, Jefferson, AR. Sponsor: R W Hart.

#1638 DEVELOPMENTAL EXPOSURE TO GENISTEIN RESULTS IN LONG TERM ADVERSE EFFECTS. E Padilla Banks1, W N Jefferson1, B C Bullock2 and R R Newbold1. 1Laboratory of Toxicology, NIEHS, Research Triangle Park, NC; 2Wake Forest University School of Medicine, Winston-Salem, NC. Sponsor: M L Cunningham.

#1639 EFFECTS OF NATURALLY-OCcurring COUMARINS ON 7,12-DIMETHYLBENZ[A]ANTHRACENE DNA ADDUCT FORMATION IN SENCAR MOUSE EPIDERMIS. H E Kleiner1, A Uberecken1, G W Ivie2 and J DiGiovanni1. 1Department of Carcinogenesis, The University of Texas, M.D. Anderson Cancer Center, Science Park-Research Division, Smithville, TX; 2USDA, College Station, TX.

#1640 ANTIproLIFERATIVE AND CYTOTOXIC EFFECTS OF XANTHOHUMOL IN HUMAN PROSTATE CANCER CELLS. C L Miranda1, J F Stevens2, C Willard3, S Bradford4, Y-H Yang1, M L Deinzer2 and D R Buhler1. 1Department of Environmental & Molecular Toxicology, 2Department of Chemistry, 3Department of Biochemistry & Biophysics, Oregon State University, Corvallis, OR.


#1642 THE ROLE OF DNA DOUBLE-STRAND BREAKS IN A NOVEL DNA REPAIR PROCESS. N Whitman-Hurst and S A Leeden. Curriculum in Toxicology and Department of Radiation Oncology, University of North Carolina, Chapel Hill, NC.

#1643 NEW CYCLIC ADDUCTS FORMED IN REACTIONS OF 2-CYANOETHYLENYL OXIDE AND GLYCIDAMIDE WITH DA AND DC. J J Solomon, B Zhu and W Winnik. Department of Environmental Medicine, New York University School of Medicine, Tuxedo, NY. Sponsor: L C Chen.

#1644 IRON AND/OR ACROCLOR 1254 DO NOT INDUCE MUTATIONS OF THE HII GENE OF LIVER DNA FROM LAMBDAA/LACI C57BL/6 TRANSGENIC MICE. A G Smith, B Clother and R Davies. MRC Toxicology Unit, Hodgkin Building, University of Leicester, Leicester, UK.

#1645 CYP1B1 SELECTIVELY MEDIATES BIOACTIVATION OF DIBENZO[a,J]PYRENE AND DIBENZO[a,J]PYRENE-11,12-DIHYDRODIOL IN PRIMARY HUMAN BREAST EPITHELIA. M L Larsen1, L A Schild2, P R Hanlon1, W M Bair1 and C R Jefcoate1. 1University of Wisconsin, Environmental Toxicology Center, Madison, WI; 2Oregon State University, Environmental Health Sciences Center, Corvallis, OR.

#1646 7, 12-DIMETHYLBENZ[A]ANTHRACENE METABOLISM AND DNA ADDUCT FORMATION IN ISOLATED JAPANESE MEDAKA (ORYZIAS LATIFRIS) LIVER CELLS. S C Stanna1, D L Alexander2 and M R Miller1. 1West Virginia University, Department of Biochemistry, Morgantown, WV; 2University of Wisconsin, Department of Pharmacology, Madison, WI.

| #1648 | DETERMINATION OF RELATIVE GENOTOXICITIES OF SPECIFIC NICKEL COMPOUNDS IN SHORT-TERM IN VITRO ASSAYS USING 10T1/2 CELLS. S Oshtima, A Verma, J Ramnath and J R Landolfi. Norris Comprehensive Cancer Center, Schools of Medicine and Pharmacy, University of Southern California, Los Angeles, CA. |
| #1649 | STUDY ON METABOLISM OF ARSENIC AND FLUORIDE IN THE CHRONIC ARSENIC POISONING IN INNER MONGOLIA, CHINA. H Yamauchi, T Yoshida, H Aikawa, T Tamao, M Niwa, S Saito, M Aminaka, F Kayama and K Yoshida. 1Department of Preventive Medicine, St. Marianna University School of Medicine, Kawasaki, Japan; 2Department of Environmental Health, Tokai University School of Medicine, Iseshia, Japan; 3Department of Hygiene, The Nippon Dental University, Tokyo, Japan; 4Department of Hygiene, Jichi University School of Medicine, Tochigi, Japan. |
| #1651 | CONTROLLED ARSENATE EXPOSURES OF HUMAN SUBJECTS: KINETICS OF ELIMINATION. E Lee and D B Mensel. Department of Community and Environmental Medicine, University of California Irvine, Irvine, CA. |
| #1652 | METABOLISM AND TOXICITY OF ARSENICALS IN PRIMARY RAT HEPATOCYTES. M Styblo, M L Del Razo and D J Thomas. 1University of North Carolina, Chapel Hill, NC; 2National Polytechnic Institute, Mexico City, Mexico; 3US EPA, HEERL, Research Triangle Park, NC. |
| #1653 | ACTIVATION OF NF-κ B AND AP-1 BY SODIUM ARSENITE IN HUMAN KERATINOCYTES. M Vargas and D B Mensel. University of California, Irvine, CA. |
| #1654 | ARSENITE [As(III)] AND ARSENATE [As(V)] ENHANCE DNA BINDING OF THE AP-1 AND ERL-1 TRANSCRIPTION FACTORS AND C-JUN AND C-FOS GENE EXPRESSION IN PRECISION-CUT RENAL SLICES. X-H Zheng, A R Parrish, K D Turney, H Younus and A J Gandolfi. Southwest Environmental Health Sciences Center, The University of Arizona, Tucson, AZ. |
| #1655 | MODEL FOR ARSENITE RELATED SKIN CARCINOGENESIS INVOLVING THE TUMOR SUPPRESSOR PROTEIN P53. H K Hamadeh and D B Mensel. Department of Community and Environmental Medicine, University of California Irvine, Irvine CA. |
| #1656 | DISSIMILAR EFFECT OF ARSENIC ON CELL CYCLE KINETICS IN CONTROL AND RAS-TRANSFORMED CSH 10T1/2 FIBROBLASTS. K J Trorska and R L Voorhe. Department of Pharmacology, University of Nebraska Medical Center, Omaha, NE. |
| #1657 | ARSENITE-MEDIATED DECREASES IN INDUCTION OF CYP3A IN CULTURED CHICK HEPATOCYTES: LACK OF A ROLE OF OXIDATIVE DAMAGE. C Nichols, J Jacobs, D Marek, S Wood, P Sinclair and J Sinclair. 1Micro, 2Biochem, 3Pharmacol/Toxicol, Dartmouth Medical Sch., Hanover, NH; 4VA Medical Center, White River Junction, VT; 5Mount Holyoke College, S. Hadley, MA. |
| #1658 | ARSENIC-INDUCED PERTURBATION OF NEOPLASTIC RESPONSE IN MICE. M P Walker, M Anver and B A Diwan. 1NCI at NIEHS, Research Triangle Park, NC; 2RSP, SAIC Frederick, NCI-FCRDC, Frederick, MD. |
| #1659 | ORGAN SUSCEPTIBILITY FOR ARSINE TOXICITY IN SPRAGUE-DAWLEY RATS. F Ayala-Fierro and D E Carter. Pharmacology and Toxicology, The Center for Toxicology, The University of Arizona, Tucson, AZ. |
| #1660 | THE ANION TRANSPORTER AND THE ACCUMULATION OF ARSENIC (As) IN ARSENATE-EXPOSED RABBIT ERYTHROCYTES. D J Thomas, J L Hall, J L Gunderson and K M Herbin-Davis. HEERL, US EPA, Research Triangle Park, NC. |
EFFECT OF SODIUM ARSENITE ON PORPHYRIN SYNTHESIS AND HEME METABOLISM IN CULTURED CHICK HEPATOCYTES. J Jacobs1, D Marek2, H Walton2, P Sinclair3,4 and J Sinclair3,4. VA Medical Center, WRJ, VT and Departments of 3Biochem., 4Pharmacol./Toxicol. and Micro., Dartmouth Medical School, Hanover, NH.

A STUDY OF THE EFFECTS OF DIMETHYLARSONIC ACID ON THE LIGAND STATUS OF OXYHEMOGLOBIN IN RAT ERYTHROCYTES. M A Peraza-Lopez and D E Carter. Department of Pharmacology and Toxicology, The Center for Toxicology, University of Arizona, Tucson, AZ.


DIMETHYLARSONIC ACID EFFECTS ON SIX BIOCHEMICAL PARAMETERS IN B6C3F1 MICE. S Ahmad, W A Anderson and K T Kitchin. Environmental Carcinogenesis Division, NIEHDL, US EPA, Research Triangle Park, NC.

TOUGHNESS OF SKIN IN ARSENIC EXPOSED MICE: ROLE OF GM-CSF AND TGFalpha. T Yoshida1, H Aikawa1, H Yamauchi1, K Sakabe1, F Kayama1, W Fujimoto2, D K Germolec3 and M I Luster4. 1Tokai University School of Medicine, 2Saint Marianna Medical College, 3Jichi Medical College, 4Okayama University School of Medicine, Kanagawa, Japan; 5NIEHS, NIH, Research Triangle Park, NC; 6NIOSH, Morgantown, WV.

PARTIAL PURIFICATION OF AN ARSENATE REDUCTASE FROM HUMAN LIVER AND CHARACTERIZATION OF ITS COFACTOR REQUIREMENTS. T R Radabough1 and H V Aposhian2,3. 1Committee on Genetics, 2Department of Molecular and Cellular Biology, 3Center for Toxicology, University of Arizona, Tucson, AZ.

CHRONIC ARSENITE EXPOSURE INDUCES RESISTANCE TO ACUTE TOXICITY OF ARSENIC AND ITS METABOLITES AND CROSS TOLERANCE TO CADMIUM. E H Romach1 and M P Waalkes2. 1PAI, Durham, NC; 2NCI at NIEHS, Research Triangle Park, NC.

METALLOTHIONEIN-I/II NULL MICE ARE MORE SENSITIVE THAN CONTROLS TO CHRONIC ARSENIC TOXICITY. J Liu1, Y P Liu2 and M P Waalkes3. 1PAI, Durham, NC; 2University Kansas Medical Center, Kansas City, KS; 3NCI at NIEHS, Research Triangle Park, NC.

CADMIUM AND ARSENIC INTERACTIONS IN CONTROL AND METALLOTHIONEIN-I/II NULL MICE. Y-P Liu, J Liu, S S M Habeebu and C D Klaassen. University Kansas Medical Center, Kansas City, KS.

METALLOTHIONEIN-I/II NULL MICE ARE MORE SUSCEPTIBLE THAN CONTROLS TO CHRONIC ORAL CADMIUM-INDUCED TOXICITY. C D Klaassen, Y-P Liu, J Liu and S S M Habeebu. University Kansas Medical Center, Kansas City, KS.

REDUCED UPTAKE AND INCREASED EFFLUX OF CADMIUM IN CADMIUM-RESISTANT METALLOTHIONEIN NULL CELLS. T Yanagiya1, S Himeo1, Y Kondo2 and N Imura1. 1Kitasato University, School of Pharmaceutical Sciences, Tokyo, Japan; 2Nippon Medical School, Tokyo, Japan.

CYPROTERONE ACETATE, THE ANTIANDROGEN, INDUCES A NOVEL FORM OF CELLULAR TOLERANCE TO CADMIUM INVOLVING REDUCED CELLULAR ACCUMULATION. M Takiguchi and M P Waalkes. NCI at NIEHS, Research Triangle Park, NC.

DIFFERENTIAL INDUCTION OF METALLOTHIONEIN AND HEAT SHOCK PROTEIN 72 BY CADMIUM IN THE LIVERS OF THE MALE FISCHER 344 AND THE SPRAGUE DAWLEY RAT. R K Kuester, M Waalkes, P L Goering, G Li, B Fisher, H Joumis and I G Sipes. Department of Pharmacology and Toxicology, Center for Toxicology, The University of Arizona, Tucson, AZ.

ACTIVATION OF HEPATIC CASPASE-3 ACTIVITY FOLLOWING CADMIUM CHLORIDE (CdCl2) TREATMENT IN MICE. E B Harstad, D P Hartley, K L Kolaja and C D Klaassen. University Kansas Medical Center, Kansas City, KS.

CADMIUM BLOCKS APOPTOSIS INDUCED BY CHROMIUM, HYGROMYCIN B AND ACTINOMYCIN D: THE ROLE OF CASPASE-3 INHIBITION. C Yuan1, M B Kadiiska2, R P Mason2 and M P Waalkes1. 1NCI at NIEHS and 2NIEHS, Research Triangle Park, NC.
#1676 COMPARISON OF THE CYTOTOXIC EFFECTS OF CADMIUM (Cd²⁺) IN S-180 AND S-180L CELLS. P C Lamar, J P Johnsen and W C Protaziek. Department of Pharmacology, Midwestern University, Downers Grove, IL.

#1677 CADMIUM ACTIVATES ONCOGENE EXPRESSION IN HUMAN PROSTATE EPITHELIAL CELLS. W E Achazari¹, D Bello-Deocampo², M M Webber² and M P Waalkes¹. ¹NCI at NIEHS, Research Triangle Park, NC; ²Michigan State University, East Lansing, MI.

#1678 ACTIVATION OF CADMIUM UPTAKE BY CALMODULIN. T Chakraborti, L Olivi and J Bressler. Kennedy-Krieger Institute, Baltimore, MD.

#1679 PROTEIN KINASE C REGULATES CADMIUM UPTAKE IN KIDNEY CELLS. L Olivi, T Chakraborti and J Bressler. Kennedy-Krieger Institute, Baltimore, MD.

#1680 CADMIUM-INDUCED LUNG INJURY IN MICE: EVIDENCE FOR A SPECIFIC INCREASE IN EPITHELIAL PERMEABILITY. W C Protaziek¹, T S Pitt¹, K E Huncovsky¹, P C Lamar¹, J N Kasimos¹ and R J Niewenhuis². ¹Midwestern University, Downers Grove, IL; ²Philadelphia College of Osteopathic Medicine, Philadelphia, PA.

#1681 EFFECT OF ZINC AND ALBUMIN PRETREATMENT ON CADMIUM UPTAKE IN RAT HEPATOCYTES EXPOSED UNDER PHYSIOLOGICAL CONDITIONS. N J DelRaso and J M Frazier. Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH.

#1682 EFFECTS OF ORAL CADMIUM ADMINISTRATION ON RENAL FUNCTION AND BONE METABOLISM IN MALE RATS. H Ohta, S Asami, Y Seiki and H Yoshikawa. Department of Occupational Health and Toxicology, School of Allied Health Sciences, Kitasato University, Sagamihara, Kanagawa, Japan.

#1683 ANTIOXIDANT POTENTIAL IN BLOOD OF WORKERS EXPOSED TO LEAD AND CADMIUM IN THEIR WORKPLACE. W Wasowicz, J Gromadzinska and K Rydzynski. The Nofer Institute of Occupational Medicine, Lodz, Poland. Sponsor: E Dybing.

#1684 PROTECTION AGAINST CHRONIC CADMIUM TOXICITY BY CALORIC RESTRICTION. Z A Shaikh, S Jordan and W Tang. Department of Biomedical Sciences, University of Rhode Island, Kingston, RI.

#1685 PROTECTION AGAINST CHRONIC CADMIUM TOXICITY BY GLYCINE. W Tang and Z A Shaikh. Department of Biomedical Sciences, University of Rhode Island, Kingston, RI.

#1686 BIDIRECTIONAL TRANSPORT OF CADMIUM ACROSS APICAL MEMBRANE OF RENAL EPITHELIAL CELL LINES VIA H⁺ ANTIPORTER AND INORGANIC ANION EXCHANGER. T Endo, O Kimura and M Sakata. Health Sciences University of Hokkaido, Japan.


#1688 CADMIUM INDUCED FREE RADICAL GENERATION AND LIPID PEROXIDATION IN THE KIDNEY AND GILLS OF FRESHWATER FISH, CLARIA BATTRACHUS. D Desai¹, T V D D Ramesh², S L N Reddy³, B Rajamma² and S Rajamma³. ¹Department of Neurology, University of Mississippi Medical Center, Jackson, MS; ²Osmania University, Hyderabad, India; ³Department of Biology, Alcorn State University, Lorman, MS.


#1690 TISSUE DISTRIBUTION OF CADMIUM IN RATS TREATED ORALLY WITH CADMIUM FOR 8 MONTHS. H Hiratsuka¹, S Satoh², M Satoh³, M Nishijima⁴, M Shibutani⁵, K Mitsumori⁶ and M Ando⁵. ¹Mitsubishi Chemical Safety Institute Ltd., Ibaraki, Japan; ²Ina Research Inc., Nagano, Japan; ³NIES, Ibaraki, Japan; ⁴The Tokyo Metropolitan Research Labo. of Public Health, Tokyo, Japan; ⁵NIHS, Tokyo, Japan. Sponsor: M Tsuchitani.

**WEDNESDAY AFTERNOON, MARCH 17**
1:30 PM - 4:30 PM
**ERNEST N. MORIAL CONVENTION CENTER EXHIBIT HALL A**
**POSTER SESSION: BEHAVIORAL NEUROTOXICOLOGY**
Chairpersons: Mary E. Gilbert, US EPA, Research Triangle Park, NC and Arun L. Jadav, Texas Southern University, Houston, TX
Displayed: 1:30 PM - 4:30 PM
Attendee: 3:00 PM - 4:30 PM
VALIDATION OF THE NAVY NEUROBEHAVIORAL TOXICITY ASSESSMENT BATTERY (NTAB). S M McInturf, G D Ritchie, C Y Ademohn, A F Nordholm and J Rossi. 1Naval Health Research Center Detachment-Toxicology (NHRC/TT); 2Geo-Centers, Inc., Wright-Patterson AFB, OH. Sponsor: E A Smith.

BEHAVIORAL TOXICITY OF ETHEROLN IN RATS. E J Popke, S R Allen, C M Fogle and M G Paule. Division of Neurotoxicology, National Center for Toxicological Research, FDA, Jefferson, AR.

NEUROBEHAVIORAL SCREENING OF CHILD AND ADULT BYSTANDERS EXPOSURE TO TOLUENE DISOCIYANATE APPLICATION. R Singer. Independent Practice, Santa Fe, NM.

A 13-WEEK NEUROTOXICITY STUDY OF PHENOL ADMINISTERED IN THE DRINKING WATER TO THE RAT. P C Beyrouthy, P A Tellier, S S Dumond, J H Burala, R L Joiner, B J Dunn, R Gingell and J M Mcacher. 1ClinTrials BioResearch, Senneville, QC, Canada; 2GE Plastics, Pittsfield, MA; 3Consultant to Aristotle, Pittsburg, PA; 4 Allied Signal, Morristown, NJ; 5Shell Chemical Company, Houston, TX; 6The Dow Chemical Company, Midland, MI.

SUBCHRONIC TOXIC AND NEUROTOXIC EFFECTS OF ACPC (1-Aminocyclopentylpropene-1-carboxylic Acid) IN RATS. C P Chengelis, C Elangbam, M Butts and M Macceccini. 1WIL Research Laboratories, Inc., Ashland, OH; 2Pathology Associates Int., Fredericksberg, MD; 3Beansden Bio, Inc., Aston, PA.

SPATIAL LEARNING AND LTP CORRELATE WITH CHANGES IN HIPPOCAMPAL NMDAR-1 mRNA AND PROTEIN IN ADULT RATS EXPOSED TO Pb DURING DEVELOPMENT. M K Nickel, N L Desmond, J L McGlothlan, A C Kuhmanna and T R Guitarie. 1Department of Envirn. Health Sci., The Johns Hopkins University SHPH, Baltimore, MD; 2Department of Neurosurgery, University of Virginia, Charlottesville, VA.

EFFECTS OF LEAD, MAGNESIUM AND ZINC MIXTURE ON SPoIAL MEMORY CAPABILITY AND NMDA-RECEPTOR SUBUNIT COMPOSITION IN F344 RATS. H M Newman, K Magnusson and R S H Yang. 1Center for Environmental Toxicology and Technology, Department of Environmental Health and 2Department of Anatomy & Neurobiology, Colorado State University, Fort Collins, CO.

DEVELOPMENTAL LEAD (Pb) EXPOSURE FAILS TO DISRUPT SPATIAL LEARNING IN THE MORRIS WATER MAZE. T E Samsam and M E Gilbert. 1, 2NDT, NHEERL, US EPA, Research Triangle Park, NC; 2National Research Council, Research Triangle Park, NC.

CHRONIC LEAD EXPOSURE ALTERS EXPLICIT MEMORY FUNCTION. L L Driscoll, J J Wu, K J Zurich and B J Strupp. Department of Psychology & Div. of Nutritional Sci., Cornell University, Ithaca, NY.

ENDURING EFFECTS OF EARLY LEAD EXPOSURE: ASSESSMENT OF SUSTAINED ATTENTION, HIBITORY CONTROL AND INFORMATION PROCESSING SPEED. B J Strupp, R M Morgan and H Garavan. Department of Psychology & Division of Nutritional Sciences, Cornell University, Ithaca, NY.

EVIDENCE FOR THE ROLE OF DOPAMINE D2 RECEPTORS IN MEDIATING ALTERATIONS IN FIXED INTERVAL PERFORMANCE BY LOW LEVEL LEAD (Pb) EXPOSURE. O O Jadhav. College of Pharmacy & Health Sciences, Texas Southern University, Houston, TX.

Pb EXPOSURE MODIFIES DOPAMINE (DA) ANTAGONISM OF BUT NOT BEHAVIORAL SENSITIZATION TO QUINPIROLE'S LOCOMOTOR ACTIVATING EFFECTS. D E Parkevich, M R Bauter, B J Brocket and D A Cory-Slechta. Department of Environmental Medicine, University of Rochester Medical School, Rochester, NY.

METHYLPHENIDATE (RITALIN) DOES NOT REVERSE THE EFFECTS OF LOW-LEVEL LEAD (Pb) EXPOSURE ON A WAITING-FOR-REWARD BEHAVIORAL PARADIGM. B J Brocket and D A Cory-Slechta. Department of Environmental Medicine, University of Rochester, Rochester, NY.

EFFECTS OF CHRONIC LEAD EXPOSURE ON NEUROBEHAVIOURAL FUNCTION AND DOPAMINERGIC RECEPTORS IN RATS. T Ma, H-H Chen and I K Ho. Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.

EFFECTS OF SUCIMER ON REGIONAL BRAIN Pb LEVELS IN PRIMATES. J Cremin, Jr., M Luck, N Laughton and D R Smith. 1Environmental Toxicology, University of California, Santa Cruz, CA; 2Harlow Primate Center, University of Wisconsin, Madison, WI.
THE EFFECT OF CHRONIC DIETARY LEAD EXPOSURE ON GALACTOLIPID METABOLISM IN RATS. W Deng and R D Poretz. Rutgers University, New Brunswick, NJ. Sponsor: K R Cooper.

BRAIN AND PLACENTAL LESIONS PRODUCED IN RAT FETUSES PRENATALLY EXPOSED TO LOW-LEVEL LEAD ACETATE. J Villeda-Hernández¹, R Barroso-Moguel¹, M Méndez-Arnema³ and C Ríos². ¹Lab Neuromorfología Celular and ²Depto. de Neuroquímica, Instituto Nacional de Neurología y Neurocirugía, México.

INFLUENCE OF SUBACUTE MANGANESE SULFATE ON THE NEUROBEHAVIOR OF FEMALE AND MALE RATS. H L Komiskey, X F Chen and D Sarpong. College of Pharmacy, Xavier University of Louisiana, New Orleans, LA.

THE EFFECTS OF METHYLMERCURY EXPOSURE ON VISUAL AND AUDITORY FUNCTIONS IN NONHUMAN PRIMATES. T M Burbacher¹, K S Grant¹, S G Gilbert² and D C Rice³. ¹University of Washington, Seattle, WA; ²Biosupport, Inc., Redmond, WA; ³Health Protection Branch, Ottawa, Ontario, Canada.

ACQUISITION OF A MULTIPLE DRI EXTINCTION SCHEDULE OF REINFORCEMENT IN RATS EXPOSED DURING DEVELOPMENT TO METHYLMERCURY. E B Rasmussen and M C Newland. Auburn University, Auburn, AL.

EFFECTS OF MERCURY VAPOR AND GENDER ON SUSTAINED ATTENTION IN RATS. P J Bushnell¹, T E Samsam¹, B K Padnos¹, D L Morgan², R P Beilis³ and S Barone, Jr.¹. ¹Neurotoxicology Division, NIEERL, US EPA, Research Triangle Park, NC; ²NIEHS, Research Triangle Park, NC; ³NCEA, US EPA, Washington, DC.

DIFFERENTIAL EFFECTS OF TRIMETHYLITIN ON TASKS RELATED TO TIME ESTIMATION AND APPETITIVE MOTIVATION IN RATS. A J Mayorga, C M Fogle and M G Paule. Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, AR.

WEDNESDAY EVENING, MARCH 17
4:30 PM - 5:30 PM
ERNEST N MORIAL CONVENTION CENTER
ROOM 220
SOT COUNCIL MEETING WITH GRADUATE STUDENTS/POST-DOCTORAL FELLOWS
To enable the SOT Council to better understand the issues facing graduate students/post-doctoral fellows, a discussion has been scheduled. Interested students/post-doctoral fellows should bring ideas for future SOT activities and programs to this informal dialogue.

WEDNESDAY EVENING, MARCH 17
6:00 PM - 7:30 PM
HILTON NEW ORLEANS RIVERSIDE HOTEL
SPECIALTY SECTION MEETINGS: EPIDEMIOLOGY, IMMUNOTOXICOLOGY, MECHANISMS, AND OCCUPATIONAL HEALTH

WEDNESDAY EVENING, MARCH 17
6:30 PM - 8:00 PM
HILTON NEW ORLEANS RIVERSIDE HOTEL
REGIONAL CHAPTER MEETINGS
(Confirm the exact times and locations of the Regional Chapter Meetings from the Annual Meeting Calendar.)
THURSDAY MORNING, MARCH 18
8:30 AM - 12:00 NOON
ERNEST N. MORIAL CONVENTION CENTER
ROOM R01

SPECIAL WORKSHOP SESSION, INTERNATIONAL UNION OF TOXICOLOGY (IUTOX)-SPONSORED WORKSHOP

DISCUSSION OF THE INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS "WHITE BOOK" ENTITLED NATURAL AND ANTHROPOGENIC ENVIRONMENTAL ESTROGENS: THE SCIENTIFIC BASIS FOR RISK ASSESSMENT

On Thursday morning, March 18, 1999, the International Union of Toxicology (IUTOX) will sponsor a workshop to discuss the findings and conclusions of the recent book: Natural and Anthropogenic Environmental Estrogens: The Scientific Basis for Risk Assessment. The book was prepared in 1998 by three International Scientific Unions (IUTOX, PHAR, IUPAC); a copy will be issued at no charge to each workshop participant prior to the meeting.

Discussion leaders will stimulate participant debate around key issues addressed in the book (biology of the endocrine system, the principles of risk assessment, claims concerning a decline in sperm count, epidemiological evidence of cancer associated with estrogens, naturally occurring estrogens, chemistry and fate of estrogenic chemicals, effects on the environment, testing methods). There will be no charge for those registered for the SOT meeting to participate in the Workshop and receive a copy of the book. However, space is limited and individuals interested in attending the Workshop must register in advance.

For registration information contact James Bus at: jbus@dow.com.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 207

LATE-BREAKING RESEARCH IN TOXICOLOGICAL SCIENCES

Platform presentations will be made on late-breaking research in toxicological sciences. Handouts will be available at the registration desk and in room 207 just before the session begins.
#1716 9:50 MECHANISMS AND MODULATION OF CHROMIUM-INDUCED APOPTOSIS. S R Paterno. Department of Pharmacology, Molecular and Cellular Oncology Program, The George Washington University Medical Center, Washington, DC.

#1717 10:25 MECHANISMS CONTRIBUTING TO SYSTEMIC AUTOIMMUNE DISEASE: MERCURY-INDUCED TYROSINE PHOSPHORYLATION AND DISRUPTION OF THE CD95/Fas APOPTOTIC DEATH PATHWAY. M J McCabe, Jr, and A J Rosenwica. Institute of Chemical Toxicology and Department of Biological Sciences, Wayne State University, Detroit, MI.

11:00 GENERAL DISCUSSION.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R04-R05

SYMPOSIUM SESSION: XENOBIOTIC EFFECTS ON CELL ADHESION MOLECULES AND EXTRACELLULAR MATRIX INTERACTIONS

Sponsored By: The Mechanisms and Molecular Biology Specialty Sections

Chairpersons: Kathleen T. Shiverick, University of Florida, Gainesville, FL, and B. Lynn Allen-Hoffmann, University of Wisconsin, Madison, WI

The extracellular matrix is composed of a variety of versatile proteins and polysaccharides that are secreted locally and assembled into an organized meshwork. The extracellular matrix plays an active and complex role in regulating the behavior of cells that contact it. Cell migration, gene expression, proliferation, shape, function, and cell death are all influenced by interaction with the extracellular matrix. Cells not only secrete extracellular matrix glycoproteins, but also bind to these molecules through specific cell surface receptors. Cell surface adhesion receptors that will be highlighted in this symposium include members of the integrin and cadherin superfamilies. CYPIA regulation in a variety of epithelial cell types is influenced by cadherin family members. Oxidative stress and polycyclic aromatic hydrocarbons disrupt cadherins/catenins complexes leading to decreased adhesion in hepatic and uterine models, respectively. Environmental contaminants such as asbestos impact on recruitment and adherence of neutrophils and macrophages in the lung. Remodeling of the extracellular matrix occurs during normal physiological processes such as embryonic development and wound healing in the adult. However, direct activation of tyrosine kinases and the matrix remodeling enzyme, urokinase, by asbestos may contribute to fiber-induced pathology in the lung. The effects of xenobiotics on extracellular matrix organization, signaling, and adhesion receptors will be discussed in this symposium designed to highlight this emerging area in toxicology. Each speaker will provide a unique perspective on xenobiotic perturbation of cell-cell and cell-matrix interactions.

#1718 8:30 XENOBIOTIC EFFECTS ON CELL ADHESION MOLECULES AND EXTRACELLULAR MATRIX INTERACTIONS. K T Shiverick and B L Allen-Hoffmann. University of Florida, Gainesville, FL, and University of Wisconsin, Madison, WI.

#1719 8:40 EXPRESSION OF ADHESION MOLECULES AND PROTEASE ACTIVITY IN ENDOTHELIAL CELLS AND AIRWAY EPITHELIAL CELLS EXPOSED TO ASBESTOS. A Barchowsky, R Rousse, and M Treadwell. Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH. Sponsor: K T Shiverick.

#1720 9:15 OXIDATIVE STRESS DISRUPTS THE E-CADHERIN/CATENIN CELL ADHESION COMPLEX. A R Parrish and A J Gandolfi. Southwest Environmental Health Sciences Center, The University of Arizona, Tucson, AZ.

#1721 9:50 BENZO[ A]PYRENE-MEDIATED INHIBITION OF UTERO-PLACENTAL CELL INVASION AND EXPRESSION OF CELL ADHESION MOLECULES. K T Shiverick, G D Charles and M A McGarry. Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Gainesville, FL.

#1722 10:25 CELL ADHESION AND CYPIA EXPRESSION: WHAT'S THE CONNECTION? B L Allen-Hoffmann and M A Weitzel. Department of Pathology, Biotechnology Training Program and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

11:00 GENERAL DISCUSSION.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R04-R05

INNOVATIONS IN TOXICOLOGICAL SCIENCES: CYTOKINES, BIOLOGY, GENE REGULATION AND ROLE IN THE PATHOGENESIS OF LUNG DISEASE

Sponsored By: The Inhalation Specialty Section

Chairpersons: Kevin E. Driscoll, Procter & Gamble Pharmaceuticaals, Cincinnati, OH and Debra L. Laskin, Rutgers University, Piscataway, NJ

Altered cytokine expression can contribute to changes in lung structure and function associated with inhalation of pneumotoxic chemical and biological agents. This symposium focuses on the role of cytokines in acute lung injury and the pathogenesis of lung diseases including: chronic airways disease; allergic asthma; and interstitial lung disease. Cytokines such as TNFα and interleukin (IL)-1 can initiate responses to inhaled agents, stimulating a cascade of cytokine and cell-cell interactions which result in recruitment and activation of inflammatory and immunocompetent cells. Chemokines (e.g., IL-8, monocyte chemotactic protein 1) are TNFα and IL-1-inducible cytokines which play critical roles in recruitment of cells to sites of tissue injury. Recent studies suggest chemokines can influence expression of other cytokines (e.g., IL-4, IL-12) which drive a transition from Th1 to Th2 lymphocytic responses and contribute to chronicity of inflammation. In this respect, Th2 cells and their associated cytokines (e.g., IL-4, IL-5, IL-13)
appear to play a role in the pathogenesis of asthma. IL-4 and IL-13 being critical in the regulation of IgE synthesis and IL-5 contributing to the recruitment and activation of eosinophils. Dysregulation of cytokine expression can be a key factor in remodeling of respiratory tract tissues after exposure to pneumotoxic agents. For example, altered expression of platelet-derived growth factor (PDGF) A and B, mitogens for mesenchymal cells, and transforming growth factor β1 (TGFβ1), which regulates expression of matrix proteins, plays a critical role in the pathogenesis of asbestosis and likely other interstitial lung diseases. Similarly, studies in transgenic models suggest overexpression of the IL-6-type cytokine, IL-11, can contribute to airway remodeling such as that seen in asthmatic lungs. Expression of genes coding for several inflammatory and immunoregulatory cytokines appears to be regulated, in part, by redox sensitive transcription factors such as NFE2B and AP-1. Oxidant induction of cytokine gene transcription may represent a common mechanism whereby several environmental agents increase cytokine expression in the respiratory tract. Symposium presentations will discuss research at the molecular, cellular and whole animal levels relevant to the above concepts on cytokine function in normal health and disease.

#1723 8:30 INTRODUCTION. K E Driscoll. Procter & Gamble Pharmaceuticals, Cincinnati, OH.

#1724 8:35 THE DYNAMIC INTERACTIONS BETWEEN CYTOKINES, CHEMOKINES AND ADHESION MOLECULES DICTATES THE EVOLUTION OF CHRONIC DISEASE. S L Kunkel. Department of Pathology, The University of Michigan Medical School, Ann Arbor, MI. Sponsor: K E Driscoll.


#1726 9:35 IL-6-TYPE CYTOKINES IN AIRWAYS DISEASE. J A Elias. Yale University, University School of Medicine, New Haven, CT. Sponsor: K E Driscoll.

#1727 10:05 EXPRESSION OF PDGF AND TGFβ1 AT SITES OF LUNG INJURY. G Hoyle, A R Brody, D Brass and J Liu. Lung Biology Program, Department of Pathology, Tulane University Medical Center, New Orleans, LA. Sponsor: K E Driscoll.

#1728 10:35 CHEMICAL-INDUCED ACTIVATION OF NUCLEAR TRANSCRIPTION FACTORS AND THEIR REGULATION OF CYTOKINE SECRETION. M L Luster. National Institute for Occupational Safety and Health, Morgantown, WV.

11:05 SUMMARY. D L Laskin. Rutgers University, Piscataway, NJ.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNST N. MORIAL CONVENTION CENTER
ROOM 206

POSTER DISCUSSION SESSION: ALTERNATIVE MODELS FOR MUTAGENICITY AND CARCINOGENICITY TESTING

Chairpersons: Bala B. Gollapudi, Dow Chemical Company, Midland, MI and James E. Klaunig, University of Indiana School of Medicine, Indianapolis, IN

Displayed: 8:30 AM - 11:30 AM

Discussed: 9:30 AM - 11:30 AM

#1729

CHARACTERIZATION OF THE METABOLIC CAPACITY OF SYRIAN HAMSTER EMBRYO (SHE) CELLS. S B Stuard, G A Kerckaert and L D Lehman-McKeen. The Procter & Gamble Company, Cincinnati, OH.

#1730

ROLE OF METABOLISM IN ACETYLTRITURE (ACN) CARCINOGENICITY STUDIES IN SYRIAN HAMSTER EMBRYO (SHE) CELLS. J E Klaunig and L M Kamendulis. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1731

TAMOXIFEN INITIATION AND PHENOBARBITAL PROMOTION STUDIES IN LIVERS OF BIG BLUE® TRANSGENIC F344 RATS. J A Styles, R Davies, R E Edwards, E Martin and I N H White. MRC Toxicology Unit, University of Leicester, Leicester, UK. Sponsor: A G Smith.

#1732

PHENOBARBITAL IS MUTAGENIC AND ALTERS THE MUTATION SPECTRUM (MS) OF lacI IN THE LIVER OF BIG BLUE® TRANSGENIC MICE. B S Shane1, D L Smith-Dunn1, J G deBoer2, B W Gleichman2 and M L Cunningham3. 1 Institute for Environmental Studies, Louisiana State University, Baton Rouge, LA; 2 Centre for Environmental Health, University of Victoria, Victoria, BC, Canada; 3 Environmental Toxicology Program, NIEHS, Research Triangle Park, NC.

#1733

SILICA-INDUCED MUTATIONS IN THE LUNGS OF BIG BLUE® RATS BUT NOT MICE. A C P Elder1, B Stripp1, J Finkelstein2, C Cox3, N Corson1, P Mercer1 and G Oberdörster1. University of Rochester, Departments of Environmental Medicine1, Pediatrics2 and Biostatistics3, Rochester, NY.
#1734 USE OF A LACZ PLASMID-BASED TRANSGENIC MOUSE MODEL FOR THE DETECTION OF MUTATIONS INDUCED BY IONIZING RADIATION. J A Kindl, M E T I Boerrigter2, R N Winn1, C H Jago3 and C E Dallas1. 
1University of Georgia Athens, GA; 2Leven, Inc., Bogart, GA; 3Savannah River Ecology Laboratory, Aiken, SC.

#1735 ASSESSMENT OF THE IN VIVO MUTAGENICITY OF ETHYLENE OXIDE IN THE BONE MARROW OF B6C3F1 lact TRANSGENIC MICE FOLLOWING A CHRONIC INHALATION EXPOSURE. L Recio1, D J Abernethy1, M Donnez2, L Pluta3 and J Preston1. 
1Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 2Integrated Laboratory Systems, Research Triangle Park, NC.

#1736 TRANSGENE EXPRESSION IN LIVER AND KIDNEY OF TG.AC MICE FOLLOWING TISSUE INJURY. D A Delker, B L Yano and B B Gollapudi: The Dow Chemical Company, Midland, MI.

#1737 DERMAL CARCINOGENICITY STUDIES IN HOMO- AND HEMIZYGOUS TRANSGENIC TG.AC MICE WITH TPA: COMPARISON OF TRANSGENE EXPRESSION, GENOTYPE AND PHENOTYPE. P J Spencer1, D A Delker2 and B B Gollapudi2. 1University of Michigan, Toxicology Department, Ann Arbor, MI; 2The Dow Chemical Company, Health and Environmental Research Laboratories, Midland, MI.


#1739 USE OF LASER CAPTURE MICRODISSECTION (LCM) TO DETECT HETEROGENEOUSLY DISTRIBUTED P53 MUTATIONS WITHIN AFLATOXIN B1 (AFB1)-INDUCED MOUSE LUNG TUMORS. A S Tan1, J F Foley2, T R Devereux2, R R Maronpot2 and T E Massie1,3. Departments of 1Pharmacology and Toxicology and 3Medicine, Queen’s University, Kingston, ON, Canada; 2National Institute of Environmental Health Sciences, Research Triangle Park, NC.


#1741 CHARACTERIZATION OF THE P53-HETEROZYGOUS MOUSE: SPONTANEOUS PROLIFERATIVE LESIONS, ORGAN WEIGHTS, BODY WEIGHTS. L L Lanning1, M L Wenk1, C E Benley1, E K LeGrand2 and T C Dailey1. 1MA Biosciences Inc., Rockville, MD; 2R.W. Johnson Pharmaceutical Research Institute, Raritan, NJ.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION METHODS
Chairpersons: Timothy Roy, Mobil Business Resources Corporation, Paulsboro, NJ and Kenneth L. Cheevers, NIOSH, Cincinnati, OH
Displayed: 8:30 AM - 11:30 AM
Attended: 8:30 AM - 10:00 AM

#1742 EVALUATION OF THE GENOTOXICITY OF CHEMICALS CURRENTLY UNDERGOING IN VIVO CARCINOGENICITY TESTING USING THE P53 INDUCTION ASSAY. P J Duerssen-Hughes, M D Kale, O Ozcan, J Yang and M Zaki. Department of Biology, Georgia State University, Atlanta, GA. Sponsor: D Barfas.


#1744 SCREENING BY QXL-PCR AS A TOOL TO ASSESS GENOTOXICITY FROM AIRBORNE PARTICULATES. A Molinelli, Y Rodriguez, B D Jiménez and C L Cadilla. University of Puerto Rico, School of Medicine, Department of Biochemistry and Center for Environmental and Toxicological Research, San Juan, PR.


#1746 AMNIOTIC FLUID AND MATERNAL/FETAL BLOOD COLLECTION IN LABORATORY MICE. A Georgieva-Kotzeva, D E Redwell, T Agajanova and M Tufa. Huntingdon Life Sciences, East Millstone, NJ.
ELISA-BASED OLIGONUCLEOTIDE LIGATION ASSAYS FOR THE DETECTION OF SINGLE NUCLEOTIDE POLYMORPHISMS (SNPs) IN BIOTRANSFORMATION ENZYMES. F M Farin, S Quigley, Y Hitosis, C L Keener, J R Walker and C J Omiecinski. Center for Ecogenetics and Environmental Health, Department of Environmental Health, University of Washington, Seattle, WA.


ARE RIGOROUS STUDY METHODS REPORTED IN RESEARCH USING ANIMAL MODELS? R C Daru, L Yip, K Heard, R B Hill and G M Bogdan. Rocky Mountain Poison and Drug Center, Denver, CO.

DEVELOPMENT AND UTILIZATION OF A PHARMA/TOXICOKINETIC MODEL FOR EXTRACELLULAR MATRIX PROTEINS USED IN THE TREATMENT OF PERIODONTAL DISEASE. S E McPherson1, B J Tucker1 and A De Peyster2. 1Desmos Inc., San Diego, CA; 2San Diego State University, San Diego, CA.

ACUTE TOXIC CLASS METHODS: USE, PROPERTIES AND INTERNATIONAL HARMONIZATION. W Diener and E Schiede. Federal Institute for Health Protection of Consumers and Veterinary Medicine (BgVV), Berlin, Germany. Sponsor: J Pauluhn.

HUMANE END-POINTS IN ACUTE TOXICITY TESTING. E Schiede, I Gerner and W Diener. Federal Institute for Health Protection of Consumers and Veterinary Medicine (BgVV), Berlin, Germany. Sponsor: J Pauluhn.

IN VITRO PERCUTANEOUS ABSORPTION STUDIES OF CONTAMINATED SOILS: HPLC DETECTION OF DERMALLY BIOAVAILABLE BENZO(AD)PYRENE. R Singh1, A J Krueger2, E H Weyand3 and T A Roy4. 1College of Pharmacy, Rutgers, The State University of New Jersey, Piscataway, NJ; 2Petrotec Inc., Langhorne, PA.


PRODUCTION OF ANTIBODIES TO METHADONE FOR TOXICOLOGICAL STUDY. N Chiiki-Chorfi1, C Pharm-Huy1, H Galons2, J-M Warner1 and J-R Claude1. 1Laboratoire de Toxicologie, 2Laboratoire de Chimie Organique, Faculté de Pharmacie, Université Paris V, Paris, France.

NEST BOX FOR EXCRETA COLLECTION FROM MOUSE DAMS THROUGH PARTURITION. C A Blum1, A K Wilson1 and M H Bhattacharyya2. 1Oregon State University, Corvallis, OR; 2Benedictine University, Lisle, IL. Sponsor: Argonne National Laboratory, Argonne, IL.

EVALUATING THE CYTOTOXICITY OF 181 CHEMICALS TO HELA CELLS USING SAR EXPERT SYSTEM. X Zhu1, G Klopman2 and H S Rosenkranz1. 1Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; 2Department of Chemistry, Case Western Reserve University, Cleveland, OH.

A METHOD FOR QUANTITATION OF TISSUE VINCLOZOLIN AND METABOLITES USING A BENCHMA/® AUTOMATED SPE WITH GC-MS. K L Cheever, K L Marlow, S R Skaggs, J C Clark, T W Turner, W J Moorman and D G DeBord. NIOSH, Exp. Toxicol., Cincinnati, OH.

A FLUORESCENCE PLATE READER ASSAY FOR MONITORING THE SUSCEPTIBILITY OF BIOLOGICAL SAMPLES TO LIPID PEROXIDATION. M A Tirmenstein, C A Piers, T L Leraas and M W Farris. Department of Pharmaceutical Sciences, College of Pharmacy and Graduate Program in Pharmacology/Toxicology, Washington State University, Pullman, WA.


THE EFFECTS OF SODIUM NITRITE ON METHEMOGLOBIN FORMATION IN NONHUMAN PRIMATES. G A Rockwood, M B Gold, A V Finger, K W Wyant and S I Baskin. Divisions of Drug Assessment, Pharmacology and Comparative Medicine, United States Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

RAT ERYTHROCYTE ACETYLCOLINESTERASE (ACHE) MEASUREMENT USING A RADIOMETRIC METHOD. L Haard and Y Deschamps. CitiTrials BioResearch Ltd, Clinical Laboratories, Montreal, Quebec, Canada. Sponsor: G Latham.
THK DEVELOPMENT OF AN IN VITRO MODEL FOR URINARY TRACT CELLS FROM C57BL/6N MICE. P L Bryant, L M Reid, E Diaza and B A Abbo. 1Department Environmental Sciences and Engineering, 2Department of Cell and Molecular Physiology and Program in Molecular Biology and Biotechnology, 3ACT Core of the Center for Gastrointestinal and Biliary Disease Biology, UNC, Chapel Hill, NC; 4RTD, NHEERL, US EPA, Research Triangle Park, NC.

A METHOD FOR SPECIFICALLY ASSAYING ACETYLCHOLINESTERASE ACTIVITY IN PERIPHERAL TISSUES. R S Marshall, T L Lassiter, and S Padilla. 1Neurotoxicology Div., US EPA, Research Triangle Park, NC; 2UNC-Chapel Hill, Chapel Hill, NC.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION SCREENING FOR ENDOCRINE-MEDIATED TOXICITY

Chairpersons: William R. Kelce, Monsanto Company, St. Louis, MO and K. Barry Delclos, NCTR, Jefferson, AR

Displayed: 8:30 AM - 11:30 AM
Attended: 10:00 AM - 11:30 AM

COMPARISON OF DOG THYROID PROFILES AND MECHANISM OF ACTION IN AMITROLE, FOR 5043, KTO 3616 AND YRC 2388 REGULATORY STUDIES. R D Jones, S G Lake, T F Hastings, B P Stuart and B D Becker. Toxicology Department, Bayer Corporation, Stilwell, KS.

EVALUATION OF THE REPRODUCTIVE PARAMETERS IN RATS AFFECTED BY THE INTERACTIONS OF POLYCHLORINATED BIPHENYLS AND METHOXYPHENOCHLOR RESULTING FROM EXPOSURE DURING DEVELOPMENT. D S Respess Jr, R L Carr, N M Cox, C P McCoy, A B Moore and J E Chambers. 1Center for Environmental Health Sciences, 2Coll of Vet Medical, 3Department of Animal and Dairy Science, Mississippi State University, Mississippi State, MS.

DETECTION OF THE ANTIANDROGEN P, P'-DDE IN SPRAGUE-DAWLEY AND LONG-EVANS RATS USING A TIER 1 SCREENING BATTERY. J C Cook, S R Frame, L G Davis and J C O'Connor. DuPont Haskell Laboratory, Newark, DE.

EVALUATION OF A TIER 1 SCREENING BATTERY FOR DETECTING THE THYROID TOXICANTS PHENOBARBITAL AND PROPYLTHIOURACIL. J C O'Connor, S R Frame, L G Davis, G T Makovec and J C Cook. DuPont Haskell Laboratory, Newark, DE.

EFFECTS OF DIETARY GENISTEIN ON REPRODUCTIVE DEVELOPMENT OF SPRAGUE-DAWLEY RATS. M Casanova, J You, S Archibeque-Engle and H Heck. CHH, Research Triangle Park, NC.

A COMPREHENSIVE PROTOCOL FOR THE EVALUATION OF POTENTIAL ENDOCRINE DISRUPTING CHEMICALS. R R Newbold and K B Delclos. 1NIEHS, Research Triangle Park, NC; 2NCTR, Jefferson, AR.

ASSESSMENT OF ESTROGEN AGONIST AND ANTAGONIST ACTIVITY USING A MODIFIED RAT UTEROTROPHIC ASSAY. L A Albin, M L Kinnett, K B Flecke, A G E Wilson, W K Kelce and W F Heyden. Monsanto Company, St. Louis, MO.


UTEROTROPHIC EFFECTS OF ADMINISTRATION OF COUMESTROL AND 17ß-ESTRADIOL IN OVARIECTOMIZED SPRAGUE-DAWLEY RATS. D L Bissett, C M Kelly, C S Aulseth and H F Bolte. Huntington Life Sciences, East Millstone, NJ.

PCBs EXHIBIT DIFFERENTIAL BINDING TO RECOMBINANT HUMAN α AND RAINBOW TROUT ESTROGEN RECEPTORS. J B Matthews and T R Zacharewski. Department of Biochemistry, Michigan State University, East Lansing, MI.

BIOCHEMICAL INDICES OF ENDOCRINE EFFECTS: AN IN SITU APPROACH TO ASSESS THE ESTROGENIC ACTIVITY OF MUNICIPAL WASTEWATER. F Tilton, D Schlenk and W H Benson. Environmental and Community Health Research/RIPS, Department of Pharmacology, The University of Mississippi, University, MS.

IN VITRO VITELLOGENIN PRODUCTION BY CARP (Cyprinus carpio) HEPATO CYTES AS A TOOL FOR DETERMINING THE (ANTI-) ESTROGENIC ACTIVITY OF XENOBIOTICS. M W Smeets, T R Rankouhi, J Komen, K M Nichols, N E Kaminsky, J P Giesy and M van den Berg. Research Institute for Toxicology, Utrecht University, Utrecht, The Netherlands; Agricultural University Wageningen, Wageningen, The Netherlands; Michigan State University, East Lansing, MI.


INHIBITION OF ECDYSONE-DEPENDENT GENE EXPRESSION BY PHYTOCHEMICALS. E Oberdörster, M A Clay and A J McLachlan. Clemson University, Clemson, SC; Tulane/Xavier Center for Biomedical Research, New Orleans, LA. Sponsor: G Oberdörster.


EFFECTS OF PHYTOCHEMICALS ON MCF-7 CELL GROWTH AND ESTROGEN RECEPTOR BINDING. N E Hopkins, P L Scott, G Nikon1, M Estes, L Mosley and W L Alworth. Millsaps College, Jackson, MS; Tulane University, New Orleans, LA.

OPTIMAL pH AND SOLVENT CONCENTRATION FOR AN IN VITRO, HUMAN ESTROGEN RECEPTOR GENE TRANSACTIVATION ASSAY. G D Charles, T R Zacharewski, C Gennings, J Clemons, B Gollapudi and B W Carney. The Dow Chemical Company, Midland, MI; Department of Biochemistry, Michigan State University, East Lansing, MI; Department of Biostatistics, Virginia Commonwealth University, Richmond, VA.
USE OF A RECOMBINANT HUMAN BREAST CANCER CELL LINE, MVLN, TO SCREEN FOR ESTROGENIC ACTIVITY AMONG STRUCTURALLY-RELATED ALKYLPHENOLIC COMPOUNDS. A L Blankenship1,2, S A Villalobos1, J P Giese1 and R Balcomb3. 1National Food Safety and Toxicology Center, Institute of Environmental Toxicology, Department of Zoology, Michigan State University and 2ENTRIX, Inc., East Lansing, MI; 3Ciba Specialty Chemicals Corporation, Tarrytown, NY.

SIMILARITIES BETWEEN ACETAMINOPHEN- AND ESTRADIOL-INDUCED Proliferation OF CULTURED, ESTROGEN-RESPONSIVE BREAST CANCER CELLS. E Harnagea-Theophilus1 and M R Miller2,3. West Virginia University, Departments of 1Pharmacology & Toxicology and 2Biochemistry, Morgantown, WV; 3NIOSH, Morgantown, WV.


NEW DEVELOPMENTS IN A HAZARD IDENTIFICATION ALGORITHM FOR HORMONE RECEPTOR LIGANDS. S P Bradbury1, O G Mekenyavan2 and G T Ankle1. 1US EPA, NHEERL, Duluth, MN; 2Bourgas University, Bourgas, Bulgaria.

MOLECULAR MODELING SIMULATIONS OF RECEPTOR-LIGAND INTERACTIONS FOR ENVIRONMENTAL ESTROGENS. T C Bishop1,2 and T E Wise1,2. 1Department of Environmental Health Sciences, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA; 2Division of Basic Pharmaceutical Sciences, Xavier University College of Pharmacy, New Orleans, LA.

ENANTIOMER SELECTIVE ESTROGEN ACTIVITY OF o,p'-DDT AND o,p'-DDD OPTICAL ISOMERS. T E Wise1,2 and A W Garrison3. 1Department of Environmental Health Sciences, Tulane University School of Public Health and Tropical Medicine, 2Division of Basic Pharmaceutical Sciences, Xavier University College of Pharmacy, New Orleans, LA; 3US EPA, NERL, Athens, GA.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A

POSTER SESSION: REPRODUCTIVE TOXICOLOGY

Chairperson: Marion G. Miller, University of California, Davis, CA

Displayed: 8:30 AM - 11:30 AM

Attended: 8:30 AM - 10:00 AM

DOES FUNCTIONAL DISRUPTION OF P53 AND THE FAS SYSTEM HAVE EFFECTS ON MALE GERM CELL APOPTOSIS? M E Embree and K Boekelheide. Department of Pathology and Laboratory Medicine, Brown University, Providence, RI.

ASSESSMENT OF TOXICANT-INDUCED MORPHOLOGIC ALTERATIONS IN SERTOLI CELL-GERM CELL INTERACTIONS IN VITRO. S L Fleming and K Boekelheide. Department of Pathology and Laboratory Medicine, Brown University, Providence, RI.

DELAYED LEUPROLIDE ADMINISTRATION RESCUES SPERMATOGENESIS IN 2,5-HEXANEDIONE-INDUCED TESTICULAR ATROPHY. K Boekelheide, S J Hall and H A Schoenfeld. Department of Pathology and Laboratory Medicine, Brown University, Providence, RI.

SEMEN QUALITY AND HUMAN MALE FERTILITY: A PROSPECTIVE STUDY WITH NORMAL COUPLES. E D Glegg1, S G Semelvan1, C C Brown2 and M J Zinaman3. 1National Center for Environmental Assessment, US EPA, Washington, DC; 2National Cancer Institute, Rockville, MD; 3Loyola University Medical Center, Maywood, IL.

DIFFERENTIAL SENSITIVITY OF RAT AND MOUSE TESTIS TO THE MICROTUBULE DISRUPTORS CARBENDAZIM AND COLCHICINE. C Strandgaard1, R A Hess2 and M G Miller1. 1Department of Env. Tox., University of California Davis, Davis, CA; 2Department of Vet. Biosciences, University of Illinois Urbana, IL.

EPIDIDYMAL TOXICITY OF α-CHLOROHYDRIN: EFFECTS ON GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE ACTIVITY. K B Jelks and M G Miller. Department of Environmental Toxicology, University of California Davis, Davis, CA.

ESTERASE INHIBITION BY MOLINATE: ROLE IN TOXICITY. B S Winder, W T Jewell and M G Miller. Department of Environmental Toxicology, University of California Davis, Davis, CA.
PERCHLOROETHYLENE REDUCES RAT SPERM FERTILIZING POTENTIAL. T Berger, C M Homer, K A Jelks, B S Winder, and M G Miller. Departments of Animal Science and Environmental Toxicology, University of California, Davis, CA.

DETECTION OF TOXICANT INDUCED CHANGES OF RAT SPERM MITOCHONDRIAL MEMBRANE POTENTIAL BY FLOW CYTOMETRY. C G Gravance, M G Miller, T Berger, and D L Garner. Environmental Toxicology, University of California, Davis, CA; Veterinary Medicine, University of Nevada, Reno, NV.

ADHESION AND SIGNALING PROTEINS ASSOCIATED WITH INHIBITED SPERMATION. R N Wine and R E Chapin. NTP/NIEHS, Research Triangle Park, NC.

A NEW METHOD FOR CHARACTERIZING THE MOTION OF SPERMATOZOA. D B Dunson, C R Weinberg, S D Perreault, and R E Chapin. NIEHS, Research Triangle Park, NC; US EPA, NIEERL, Research Triangle Park, NC.

RAT SPERM ACROSOMAL STAINING USING PEANUT AGGLUTININ LECTIN (PITC-PNA) LABELLING. A M Cancel, R M Zucker, and S D Perreault. Toxicology Program, UNC, Chapel Hill NC; US EPA, Research Triangle Park, NC.

RELATIONSHIP BETWEEN DOSE AND EXPOSURE TIME ON INHIBITION OF SEA URCBIN SPERM MOTILITY BY HgCl2 AND CdCl2. I Szabo, T A Shaffer, J S Tash, and K K Rosman. Department of Pharmacology, Toxicology & Therapeutics; Center for Reproductive Sciences; Department of Molecular & Integrative Physiology; University of Kansas Medical Center, Kansas City, KS; Section of Environmental Toxicology; GSF-Institut fur Toxikologie, Neuherberg, Germany.


A PEROXYNITRITE GENERATOR MODULATES CALCIUM-MEDIATED RAT UTERINE CONTRACTILITY. T C Clipson and R Loch-Caruso. Department Environmental Industrial Health, The University of Michigan, Ann Arbor, MI.

ACTIVATION OF PROTEIN KINASE C MEDIATES THE INHIBITORY EFFECT OF LINDANE ON SPONTANEOUS UTERINE OSCILLATORY CONTRACTION. C T Wang and R Loch-Caruso. Department Environmental and Industrial Health, University of Michigan, Ann Arbor, MI.

DELTA-HEXACHLOROCYCLOHEXANE DISRUPTS THE ACTIONS OF UTEROTONINS IN VITRO. S Goel and R Loch-Caruso. Department Environmental and Industrial Health, University of Michigan, Ann Arbor, MI.

ALPHA-HEXACHLOROCYCLOHEXANE INHIBITS SPONTANEOUS AND OXYTOCIN-INDUCED UTERINE CONTRACTIONS. N Goel and R Loch-Caruso. Department Environmental and Industrial Health, University of Michigan, Ann Arbor, MI.

GAMMA GLUTAMATE CYSTEINE LIGASE (GCL) ACTIVITY AND EXPRESSION DURING THE ESTROUS CYCLE IN THE RAT OVARY. U Luderer, T J Kavanagh, C C White and E M Faustman. Department of Environmental Health, University of Washington, Seattle, WA.

DIETARY GENISTEIN DOES NOT MAINTAIN SURGICALLY INDUCED ENDOMETRIOSIS IN RATS. M S Cotner and C A Lamartiniere. University of Alabama at Birmingham, Birmingham, AL.

ROLE OF GLUTATHIONE IN UTERINE SECRETIONS DURING EARLY PREGNANCY. J J Salmen and C S Gardiner. Department of Biological Sciences, University of Northern Colorado, Greeley, CO.


CELLULAR AND MOLECULAR MECHANISMS OF ACTION OF THREE NOVEL ENVIRONMENTAL ANTIANDROGENS: TWO PHTHALATES AND LINURON. C R Lambright1, A K Hotchkiss2 and L E Gray Jr.1. 1US EPA, NHEERL, Research Triangle Park, NC; 2NCSU/US EPA Cooperative Training Program, Raleigh, NC.

8-METHOXYPSORALEN COMPROMISES OVARIAN FOLLICLE DEVELOPMENT IN WISTAR RATS. M M Dinwara, P B Hoyer, K J Chavez and D E Williams. Department of Biology, University of Southern Colorado, Pueblo, CO.

THE ARYL HYDROCARBON (AHR) RECEPTOR MAY BE INVOLVED IN THE DEVELOPMENT OF OVARIAN FOLLICLES. J A Flaws1, I K Loeffler3, T-M Lin3, R E Peterson3 and A N Hirshfield2. 1Departments of Epidemiology and Preventive Medicine, 2Anatomy and Neurobiology, University of Maryland School of Medicine, Baltimore, MD; 3School of Pharmacy and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

BIPHASIC EFFECTS OF OCTYLPHENOL ON TESTOSTERONE BIOSYNTHESIS BY CULTURED LEYDIG CELLS FROM NEONATAL RATS. E P Murono, R Derk, J H deLen. NIOSH, HELD, Morgantown, WV. Sponsor: V Castranova.

OVOTOCIC SPECIES DIFFERENCES BETWEEN RATS AND MICE WITH 3-METHYLCHOLANTHRENE AND 7,12-DIMETHYLBENZ[A]ANTHRACENE. S B Borman1, P I Christian1, I G Sipes2 and P B Hoyer1. Southwest Environmental Health Sciences Center, Departments of 1Physiology and 2Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

17B-ESTRADIOL RESCUES PRIMARY FOLLICLES FROM 4-VINYLCHLOROXENE DIEPOXIDE-INDUCED APOPTOSIS. K E Thompson1, I G Sipes2 and P B Hoyer1. Southwest Environmental Health Sciences Center, Departments of 1Physiology and 2Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

TRANSPORT OF 2,4-D INTO THE SEMINAL FLUID OF DOGS. D Bruce and L Ritter. Canadian Network of Toxicology Centres, University of Guelph, Guelph, Ontario, Canada.

LACK OF EFFECTS OF NOSE-ONLY INHALATION EXPOSURE ON TESTICULAR TOXICITY IN MALE RATS. S I Rothenberg, R M Parker, R G York, G E Dearlove, M M Martin, K H Denny, S D Lief and A M Hoberman. Primedia Argus, Horsham, PA.

ASSSESSMENT OF XANTHOTOXIN AS A REPRODUCTIVE TOXICANT IN MALE WISTAR RATS. K J Chavez, M M Dinwara, S L Sandoval, P B Hoyer, D E Williams and K Boekelheide. Department of Biology, University of Southern Colorado, Pueblo, CO.

(-)-FTC, AN OXATHIOLANE NUCLEOSIDE ANALOG FOR THE TREATMENT OF HIV AND HBV INFECTION, DID NOT PRODUCE ADVERSE EFFECTS ON REPRODUCTION AND DEVELOPMENT IN MICE. T B Grizzle, F S Rousseau, J Dtelehanty, M R Almond, J P Walsh, J A Begley and G M Szczech. Triangle Pharmaceuticals, Inc., Durham, NC.

THIRTEEN WEEK ORAL TOXICITY STUDY OF DIFLUOROMETHYLORNITHINE (DFMO) IN COMBINATION WITH TAMOXIFEN IN FEMALE RATS. B S Levine1, A P Brown1, R L Morrissey2 and J A Crowell3. 1Toxicology Research Laboratory, University of Illinois at Chicago, Chicago, IL; 2Path. Assoc. Intl., Chicago, IL; 3National Cancer Institute, Rockville, MD.

EFFECTS OF INORGANIC MERCURY ON THE REPRODUCTIVE PERFORMANCE OF C57/BL6 MICE. A Khan, A Atkinson, T Graham, S Thompson, S Ali and S Hussain. CVMNAH, Tuskegee University, Tuskegee, AL.

ZINC CHLORIDE DOSE RANGE FINDING REPRODUCTIVE STUDY IN RATS. T Graham, A Khan, A Atkinson, O Clark, S Thompson, S Ali and S Hussain. CVMNAH, Tuskegee University, Tuskegee, AL.

HYDRAMETHYLNON EFFECTS ON MALE REPRODUCTION IN YOUNG ADULT RATS. D F Crawford1, W C McCormick1 and S M Glaza2. 1The Clorox Company, Pleasanton, CA; 2Covance Laboratories, Madison, WI. Sponsor: A K Reddy.

LACK OF EVIDENCE FOR EFFECTS OF DICOFOLE ON REPRODUCTIVE HORMONE FUNCTION FOLLOWING DIETARY EXPOSURE IN RATS. A M Hoberman1, D L Shuey2, J A Foss1, R M Parker1 and S S Hurt2. 1Argus Research Laboratories, Inc., Horsham, PA; 2Rohm and Haas Company, Spring House, PA.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNEST N. MORRIS CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION: GLUTATHIONE
Chairperson: Serrine S. Lau, University of Texas, Austin, TX
1,2-DICHLOROBENZENE INDUCES OXIDATIVE STRESS IN HEPATOCYTES ISOLATED FROM FISCHER 344 AND SPRAGUE-DAWLEY RATS. H S Youn1, N C Hoglen, A R Parrish, R K Kuester and I G Sipes. Department of Pharmacology/Toxicology, Center for Toxicology, College of Pharmacy, The University of Arizona, Tucson, AZ.

ACRYLONITRILE-INDUCED OXIDATIVE STRESS IN NORMAL HUMAN ASTROCYTES. S Jacob and A E Ahmed. Department of Pathology, University of Texas Medical Branch, Galveston, TX.

ACRYLONITRILE INDUCES THE RELEASE OF TUMOR NECROSIS FACTOR-α (TNF-α), ALTERS GLUTATHIONE HOMEOSTASIS AND ACTIVATES OXIDATIVE STRESS IN MOUSE ALVEOlar MACrophages. Y Mouatafa1, E El-Dinshary2 and A E Ahmed.1 1Department of Pathology, University of Texas, Medical Branch, Galveston, TX; 2Department of Pharmacology, Faculty of Pharmacy, Suez Canal University, Suez, Egypt.

n-PROPYLTHIAZOLIDINE CARBOXYLIC ACID (PTCA) STIMULATION OF HEPATIC GLUTATHIONE (GSH) RECOVERY AFTER DEPLETION BY DIETHYLMALEATE (DEM) IN THE RAT. C Srinivasan1, T S Chen1, H T Nagasawa2 and W M Williams.1 1University of Louisville, Louisville, KY; 2VA Medical Center, Minneapolis, MN.

GLUTATHIONE DEPLETION IN PRIMARY RAT HEPATOCYTES AS AN ADDITIVE EFFECT OF DIFFERENT TOXIC MECHANISMS. A Freidig, M Hoffius, I van Holstein and J Hermans. Research Institute of Toxicology, Utrecht University, Utrecht, The Netherlands. Sponsor: M van den Berg.

EFFECT OF CHRONIC ACRYLONITRILE ADMINISTRATION ON GLUTATHIONE STATUS IN RATS. T S Chen, D Corbett, J Li and F W Benz. Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY.

EFFECTS OF AN ACUTE ETHANOL ADMINISTRATION ON HEPATIC GLUTATHIONE IN RATS. Y C Kim and D W Choi. College of Pharmacy, Seoul National University, Seoul, Korea.

GLUTATHIONE DEPLETION AND HEPATOTOXICITY FOLLOWING ADMINISTRATION OF HERBICIDE ALACHLOR. B A Wetmore1, R T Miller2 and S A Meyer. 1Department of Toxicology and 2College of Veterinary Medicine, North Carolina State University, Raleigh, NC.
MITOCHONDRIA-SPECIFIC EXPRESSION OF GLUTATHIONE REDUCTASE. J P Katin, X Xu, R S Geske, T Tamura, S B Welty and C V Smith. Department Pediatrics, Baylor College of Medicine, Houston, TX.


CORRECT STRUCTURAL ORGANIZATION AND LOCATION OF THE HUMAN MICROSOMAL GLUTATHIONE TRANSFERASE GENE (MGST1): TRANSCRIPTIONAL UP-REGULATION IN RESPONSE TO OXIDATIVE STRESS. M J Kelner1, R D Bagnell1, M A Montoya1, L Forsberg2 and R Morgenstern2. UCSD, San Diego, CA; 1Karolinska Institute, Stockholm, Sweden.

GROWTH RATE AND EFFECTS OF METHYLMERCURY ON SURVIVAL RATE AND MITOCHONDRIAL TRANSMEMBRANE POTENTIAL IN HEPA-1 CELLS OVEREXPRESSING GLUTAMATE-CYTEINE LIGASE. S Shi, S Lu, D Botta and J J Kavanagh. Department of Environmental Health, University of Washington, Seattle, WA.

EFFECT OF OVEREXPRESSION OF GLUTAMATE-CYTEINE LIGASE ON TNF AND ACTINOMYCIN-D-INDUCED APOPTOSIS IN HEPA-1 MOUSE LIVER CELLS. D Botta, C C White, C M Krefsa, R H Pierce, N Fausto, D L Eaton and J J Kavanagh. Departments of Environmental Health and Pathology and NIEHS Center for Ecogenetics and Environmental Health, University of Washington, Seattle, WA.

REGULATION OF γ-Glutamylcysteine synthetase mRNA IN THE PREIMPLANTATION MOUSE EMBRYO. S K Stover, G A Gushansky and C S Gardiner. Department of Biological Sciences, University of Northern Colorado, Greeley, CO.

DISTRIBUTION OF GLUTATHIONE, GLUTATHIONE REDUCTION AND GLUTATHIONE SYNTHESIS CAPABILITIES IN THE TROPHECTODERM AND INNER CELL MASS OF THE PREIMPLANTATION MOUSE EMBRYO. G A Gushansky, S K Stover and C S Gardiner. Department of Biological Sciences, University of Northern Colorado, Greeley, CO.

PURIFICATION, CHARACTERIZATION AND REGIONAL DISTRIBUTION OF GLUTATHIONE S-TRANSFERASE FROM CHANNEL CATFISH INTESINE. B Guo-Dagut and M O James. Department of Medicinal Chemistry, University of Florida, Gainesville, FL.

CORRELATION OF INCREASED MORTALITY WITH THE SUPPRESSION OF RADIATION-INDUCIBLE EPOXIDE HYDROLASE (EH) AND GLUTATHIONE S-TRANSFERASE (GST) GENE EXPRESSION BY DEXAMETHASON (DEX). S G Kim and S Y Nam. College of Pharmacy, Dukungs Women's University, Seoul, Korea.

EFFECTS OF SELECTED PCB CONGENERS ON DRUG- AND GLUTATHIONE-METABOLIZING ENZYMES IN THE RAT. T P Twarooki, P Espandier and L W Robertson. University of Kentucky, Graduate Center for Toxicology, Lexington, KY.

SUB-CHRONIC EXPOSURE OF THIODIGLYCOL ON HEPATIC-MIXED FUNCTION OXIDASE AND CYTOSOLIC GLUTATHIONE ANTIOXIDANT SYSTEM IN RATS. J K Vodola1, R A Angenhofer2, M W Michie2, G Reddy2 and G J Leach2. 1Dynamac Corporation Environmental Services, Aberdeen Proving Ground, MD; 2US Army Center for Health Promotion & Preventive Medicine, Aberdeen Proving Ground, MD.

THURSDAY MORNING, MARCH 18
8:30 AM - 11:30 AM
ERNST N. MORIAL CONVENTION CENTER
EXHIBIT HALL A
POSTER SESSION: RISK ASSESSMENT II
Chairpersons: Jill Ryer-Powder, Waterstone Environmental LLP, Rancho Santa Margarita, CA and Lorraine E. Twerdok, American Petroleum Institute, Washington, DC
Displayed: 8:30 AM - 11:30 AM
Attended: 8:30 AM - 10:00 AM

| #1860 | COMPARISON OF ESTIMATED INDOOR AIR CHEMICAL CONCENTRATION RESULTS FROM FATE AND TRANSPORT MODELING VERSUS SURFACE FLUX MEASUREMENTS. J E Ryer-Powder, E Morabito, E Smith and J Dagdijian. Waterstone Environmental, LLC, Fullerton, CA. |
| #1861 | A HUMAN HEALTH AND ECOLOGICAL ASSESSMENT OF VOLATILE COMPONENTS OF PM10 EMISSIONS. M J Werke, J D Schell, R A Budinsky, R P DeMott and H D Jones. ATRA Occupational and Environmental Services, Inc., Tallahassee, FL. |
| #1863 | CHARACTERIZATION OF AROMATIC CANDLE EMISSIONS AND ITS SIMILARITY TO DIESEL ENGINE EXHAUST. J D Krause, N D Poor and R D Harbison. Department of Environmental and Occupational Health, College of Public Health, University of South Florida, Tampa, FL. |
| #1864 | HIERARCHICAL APPROACH TO PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS. A S Collins1,2, T B Kepler2 and M Davidian2. 1Chemical Industry Institute of Toxicology, Research Triangle Park, NC; 2North Carolina State University, Raleigh, NC. |
| #1865 | ROUTE-TO-ROUTE EXTRAPOLATION WITH A PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL FOR CUMENE. G L Foureman1 and H J Clewell2. 1US EPA, NCEA-Research Triangle Park, Research Triangle Park, NC; 2ICF Kaiser, Inc., Ruston, LA. |
| #1866 | RELATIVE BEHAVIORAL SENSITIVITY OF RATS AND HUMANS TO ACUTE TOLUENE EXPOSURE. V A Benignus, P A Buehml and W K Boyer. US EPA, NHEERL, Research Triangle Park, NC. |
| #1869 | DETECTION OF THE DEPURINATING DNA ADDUCT, 7-(BENZO[4] PYREN-6-YL) ADENINE (BP-6-N7A) IN HUMAN URINE: A NEW CLASS OF BIOMARKERS FOR CANCER RISK ASSESSMENT. G P Casale1, M Singhall, S Bhattacharya1, E L Cavalieri1, R Ramanathan1, J Zhao2, R Jankowiak3, S J Rentard4 and J L Mumford5. 1Eppley Institute for Research In Cancer, Omaha, NE; 2Mass Spectrometry Research Resource, Washington University, St. Louis, MO; 3Department of Chemistry, Iowa State University, Ames, IA; 4Internal Medicine-Pulmonary, University of Nebraska Medical Center, Omaha, NE; 5US EPA, Research Triangle Park, NC. |
| #1870 | INTERSPECIFIC DOSEIMETRY OF FINE-MODE AEROSOLS. C J Musante1, R A Segal2,3 and T B Martone2. 1Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; 2US EPA, ETD, NHEERL, Research Triangle Park, NC; 3North Carolina State University, Raleigh, NC. Sponsor: D L Costa. |
| #1871 | CANCER AND NONCANCER ASSESSMENTS OF SOLUBLE NICKEL. L T Haber1, M L Dourson1, J Zhao1, L Erdeiich2, G Diamond3 and R Ratner4. 1Toxicology Excellence for Risk Assessment, Cincinnati, OH; 2Bailey Research Associates, New York, NY; 3Syracuse Research Corporation, Syracuse, NY; 4Mabbett and Associates, Bedford, MA. |
| #1872 | PREDICTIVITY OF PHARMACEUTICALS TOXICITY IN HUMANS FROM ANIMAL DATA. H M Olson1, G Betton2, J Stenrit1 and D Robinson3. 1Pfizer Inc., Groton, CT; 2Zeneca Pharmaceuticals, Macclesfield, England; 3ILSI-HESI, Washington, DC. |
| #1873 | PESTICIDE REGISTRATION: A NEW PARADIGM ON THE INCORPORATION OF MECHANISTIC CONSIDERATIONS WITHIN THE FRAMEWORK OF REQUIRED DESCRIPTIVE TESTING. W R Christenson, B S Wahle and C Crouch. Bayer Corporation, Stillwell, KS. |
| #1874 | APPROACH FOR ESTIMATING THE POTENTIAL AGGREGATE EXPOSURES TO ORGANOPHOSPHATES. K E Van der Jagt1, J H Driver2, M D Pandian2 and C Luchick3. 1Jellinek, Schwartz & Connolly Arlington, VA; 2risksciences.com, L.L.C., Manassas, VA; 3Rhône-Poulenc, Research Triangle Park, NC. |
| #1875 | UNCERTAINTY ASSOCIATED WITH CARCINOGENIC POTENCY OF ETHYLENE DIBROMIDE. R C Lee1, L Swenson2, B J Kelman2. 1Goldar Associates Ltd., Calgary, AB, Canada; 2GlobalTox, Inc., Seattle, WA. |
COMPARISON OF A PROBABILISTIC APPROACH TO RISK ASSESSMENT BASED ON
EMPirical AND MODELED DATA. J R Glowa 1, M A Bogdan 2 and R C MacPhail 3. 1LSU Medical School, Shreveport, LA; 2Stanford University School of Medicine, Stanford, CA; 3Neurotoxicology Division, US EPA, Research Triangle Park, NC.

EMPIRICAL vs. MECHANISTICALLY-BASED DOSE-RESPONSE MODELING OF ORGANOPHOSPHATE PESTICIDE TOXICITY. L Fahey McGrath 1 and R Ponce 2. 1UMDNJ-Robert Wood Johnson Medical School, EOHSI, Piscataway, NJ; 2University of Washington, Seattle, WA.

RELEVANCE OF DOG TOXICITY DATA FOR EVALUATING HUMAN HEALTH EFFECTS FROM EXPOSURE TO CHLORINATED PHENOXYACETIC HERBICIDES AND RELATED ORGANIC ACIDS. C Timchalk. Battelle, Pacific Northwest Division, Richland, WA.

CHARACTERIZING NONCANCER RISKS ABOVE THE REFERENCE DOSE (RfD): CHLORDBANE AND METHYL MERCURY AS EXAMPLES. J A Stickney 1, H L Carlson-Lynch, P S Price 2 and M L Dourson 3. 1ARCADIS Geraghty & Miller, Portland, ME; 2Ogden Environmental, Portland, ME; 3TERA, Cincinnati, OH.

COMPARATIVE DIETARY RISKS: BALANCING THE RISKS AND BENEFITS OF FISH CONSUMPTION. P Anderson 1, D Cartlodge 2, M Davighis 3, M Dourson 4, B Knuth 5, E Murkin 6, J Patterson 7, J Sheehika 8, J Stober 9 and J Unrine 10. 1Ogden Environmental and Energy, Westford, MA; 2Prescott College, Prescott, AZ; 3Northwestern University, Chicago, IL; 4Toxicology Excellence for Risk Assessment, Cincinnati, OH; 5Cornell University, Ithaca, NY; 6University of Guelph, Guelph, ON, Canada; 7US EPA, Athens, GA.

RELATIVE DEVELOPMENTAL RISKS OF FUSARIUM MYCOTOXIN, DEOXYNIVALENOL (DON) AND BENOMYL (BEN) IN WHEAT. L R Hicks 1,2, D R Brown, R H Storch and R J Bushway 2. 1Maine Board of Pesticides Control, Augusta, ME; 2University of Maine, Food Science Program, Orono, ME.


INTERIM ESTIMATES OF THE REFERENCE DOSE (RfD) FOR KEY BREAKDOWN PRODUCTS OF CHEMICAL AGENTS. H T Beasun, G Reddy and G J Leach. US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD.

IDENTIFICATION OF PERSISTENT AND TOXIC CHEMICAL WARFARE (CW) AGENT DEGRADATION PRODUCTS. S S Talmage 1, N B Muzio 1, A P Watson 1, J King 2, V Haaschild 2 and R A Young 2. 1Oak Ridge National Laboratory, Oak Ridge, TN; 2US Army, Aberdeen Proving Ground, MD.

UPTAKE OF METALS AND POLYCYCLIC AROMATIC HYDROCARBONS FROM CONTAMINATED SEDIMENT INTO EDIBLE BLUE CRABS. E J Hixson 1, D L Shelton 2, J D Frazier 3 and G White 1. CH2M Hill, Inc., 1Austin, TX; 2Corvallis, OR; 3Portland, OR.

DEVELOPMENT OF FISH MODEL FOR ENVIRONMENTAL CANCER RISK ASSESSMENT; INTERRELATIONSHIP OF MUTATION, APOPTOSIS AND CANCER. H I Kwak and M H Cho. Laboratory of Toxicology, College of Veterinary Medicine, Seoul National University, Korea.

HEALTH RISK ESTIMATES FOR "POLYBROMINATED DIPHENYL ETHERS" (PBDEs) ASSOCIATED WITH CONSUMPTION OF FISH AND HUMAN BREAST MILK. M M Slesak 1, R R Fay 1, M L Hardy 2, J Biesemeier 3, R J Wenning 4 and C R Kim 5. 1McLaren/Hart, Inc., Lake Charles, LA; 2Albemarle Corporation, Baton Rouge, LA; 3Great Lakes Chemical Corporation, West Lafayette, IN; 4McLaren/Hart, Inc., Alameda, CA; 5McLaren/Hart, Inc., Cleveland, OH.

HUMAN HEALTH RISKS OF ARSENIC IN MARINE ANIMALS AND REGULATORY APPROACHES. T Zewdie and M SHutcheson. Massachusetts Department of Environmental Protection, Boston, MA.


PEER REVIEW PROCESS FOR RISK ASSESSMENT DOCUMENTS AND METHODS. J Patterson and M L Dowson. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

COMMUNICATING REGULATORY INFORMATION ABOUT ENVIRONMENTAL CONTAMINANTS TO THE PUBLIC. M A Kamrin and J MacDonagh-Dunfer. Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.


CLONING, HETERLOGOUS EXPRESSION AND CHARACTERIZATION OF HUMAN CYP2A13. T Su, Q-Y Zhang and X Ding. Wadsworth Center, New York State Department of Health, School of Public Health, State University of New York at Albany, NY.

BIOTRANSFORMATION OF COUMARIN BY RODENT AND HUMAN CYTOCHROMES P450: METABOLIC BASIS OF TISSUE-SELECTIVE TOXICITY IN THE OLFACTORIO MUCOSA OF RATS AND MICE. X Zhuo, J Gu, Q-Y Zhang, D C Spink, L S Kaminsky and X Ding. Wadsworth Center, New York State Department of Health, School of Public Health, State University of New York at Albany, NY.

EXPRESSION OF BIOTRANSFORMATION ENZYMES IN HUMAN FETAL NASAL MUCOSA. J Gu, T Su, Y Chen, Q-Y Zhang and X Ding. Wadsworth Center, New York State Department of Health, School of Public Health, State University of New York at Albany, NY.
THE EFFECT OF α-XYLENENE INHALATION ON CYTOCHROME P450 ISOZYMES AND TOXICITY IN RAT LUNG AND NASAL MUCOSA. J V Radziun and R A Schatz. Northeastern University Toxicology Program, Boston, MA.


EVALUATION OF OCTAMETHYLCYCLOTETRAISLOXANE (D4) AS A POTENTIAL INHIBITOR OF HEPATIC CYTOCHROME P450 ENZYMES. J M McGim, Jr, A Madan, A Parkinson, P C Wilga, R H Gallavan, R G Meeks.


REVERSE TRANSCRIPTION-POLYMERASE CHAIN REACTION CHARACTERIZATION OF EXPRESSION OF CYP2B7 AND CYP2B8 (P450 hIB2) mRNAs IN HUMAN LIVERS. S Bai, A Parkinson, A Madan and M Czerwinski.


INSULIN-MEDIATED MODULATION OF CYTOCHROME P450 GENE INDUCTION PROFILES IN PRIMARY RAT HEPATOCYTE CULTURES. J S Sidhu and C J Omiecinski.

BONE MARROW STROMAL CELL EXPRESSION OF DMBA-METABOLIZING CYP1B1 IS REQUIRED FOR PRE-B CELL APOPTOSIS. S M Heidel, C J Czyzynski and C R Jefcoat.

THE ARYL-HYDROCARBON RECEPTOR AND CYP1B1 ARE NEGATIVE REGULATORS OF ADIPOCYTE DIFFERENTIATION. L G Gagel, D L Alexander and C R Jefcoat.


REGULATION OF CYP1B1 TRANSCRIPTION IN MCF-7 AND HEPG2 CELLS. S E Shehin and W F Greenlee.


EFFECT OF PHENOBARBITAL ON SERUM ESTRADIOL LEVELS IN SPRAGUE-DAWLEY RATS. A L Quinn, R G Meeks and J M McGim, Jr.

Dow Corning Corporation, Health and Environmental Sciences, Midland, MI.
#1916 MONO-SPECIFIC ANTIPePTIDE ANTIBODY TO HUMAN CYP2B6. D M Streser and D Kupfer. Department of Pharmacology and Molecular Toxicology, University of Massachusetts Medical Center, Worcester, MA.

#1917 CONTRIBUTION OF CYTOCHROME P450 2E1 AND P450 2B1/2 TO THE HEPATOTOXICITY CAUSED BY KEPONE AND CARBON TETRACHLORIDE. L Feng, S A Benjamin and R S H Yang. Center for Environmental Toxicology and Technology, Department of Environmental Health, Colorado State University, Ft. Collins, CO.

#1918 INSULIN-MEDIATED DECREASE IN CYP2E1 EXPRESSION IN PRIMARY CULTURED RAT HEPATOCYTES: ROLE OF SRC KINASE AND PI3-KINASE. K J Woodcroft and R F Novak. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.

#1919 GLUCOCORTICOID-MEDIATED EXPRESSION OF CYP2E1 AND CYP3A mRNA IN PRIMARY CULTURED RAT HEPATOCYTES. M S Haffer, K J Woodcroft and R F Novak. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.

#1920 COMPARISON OF CYP2E1 CONTENT IN LYMPHOCYTES OF ALCOHOLICS AND AMONG ETHNIC GROUPS. J L Rauch, M Kearns and S P Carpenter. The Agouron Institute, La Jolla, CA.

#1921 THE ROLES OF CYTOCHROMES P450 2E1 AND 2B10 IN THE STEREOCHEMICAL BIOACTIVATION OF 4-VINYLCYCLOHEXENE. S M Fontaine, E Mash and I G Sipes. Department of Pharmacology and Toxicology, College of Pharmacy, The University of Arizona, Tucson, AZ.

#1922 VARIABLE CHANGES IN CYP2E1 ACTIVITY AFTER ENDOTOXIN ADMINISTRATION IN HUMANS. S M Poloyac, R T Toshive, S I Shediolsky and R A Blouin. University of Kentucky College of Pharmacy and VA Medical Center, Lexington, KY.

#1923 CYTOCHROME P450 2E1 CONTENT OF ISCHEMIC LIVER IS MAINTAINED AT PRE-ISCHEMIC LEVELS BY DIMETHYL SULFOXIDE (DMSO). J B Ulreich, J L Boles, M A Levy, R Roy, J J Whitehead, P W Johnson, K A Andreoni and P Z Nakazato. Department of Surgery/Transplantation and 1Center for Toxicology, The University of Arizona, Tucson, AZ.

#1924 BENZENE INDUCES CYP2E1 mRNA IN RAT PERIPHERAL LYMPHOCYTES. E Gonzalez-Jasso1, T Lopez2, M Mann3, A Alberos1 and A Ortega2. 1Environmental Toxicology Section and 2Department of Genetics, Cinvestav-IPN, Mexico City, Mexico; 3Institute of Occupational Medicine, University of Padova, Padova, Italy.

#1925 EFFECTS OF LOW-DOSE CARBON TETRACHLORIDE EXPOSURE BY INHALATION OR DRINKING WATER ON CYTOCHROMES P450 2E1 AND 2B EXPRESSION. R C Zanger1, J M Benson2, K J Nikula2, V L Burnett3 and D L Springer1. 1Pacific Northwest National Laboratory, Richland, WA; 2Lovelace Respiratory Research Institute, Albuquerque, NM.

#1926 PULMONARY METABOLISM OF ETHYLBENZENE FOLLOWING EXPOSURE IN RATS. D C Pedersen and R A Schatz. Northeastern University Toxicology Program, Boston, MA.

#1927 EFFECTS OF C-TERMINAL TRUNCATION ON THE TURNOVER AND FUNCTION OF CYTOCHROME P450 2E1. J Y Hsuan and D R Koop. Department of Physiology and Pharmacology, Oregon Health Sciences University, Portland, OR.


#1929 EFFECTS OF SOY PROTEIN ISOLATE ON EXPRESSION AND GLUCOCORTICOID-INDUCIBILITY OF CYP3A AND CYP2B ENZYMES IN MALE RAT LIVER. T M Badger, M J Ronis, W Lee, R Hakkar, J C Rowlands and S Shelnut. Arkansas Children’s Nutrition Center, Arkansas Children’s Hospital Research Institute and Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR.

#1930 DIFFERENTIAL EFFECTS OF DEXAMETHASONE (DEX), PHENOBarBITAL (PB) AND CLOTRIMAZOLE (CLO) ON CYTOCHROME P450 (CYP) 3A AND MICROSOMAL EPoxide HYDROLASE (mEH) EXPRESSION IN MALE AND FEMALE RATS. C Kim1, S Y Chun1, C K Kim1, K Woodcroft2, D A Putl1, E S Roberts-Krichhoff1, S G Kim4, R F Novak2 and H Kim1,2. 1Detroit R&D, Inc., Detroit, MI; 2Institute of Chemical Toxicology, Wayne State University, Detroit, MI; 3University of Detroit Mercy, Detroit, MI; 4Duksoong Women’s University, Seoul, Korea.
#1931 CHRONIC ETHANOL TREATMENT DIFFERENTIALLY AFFECTS THE EXPRESSION OF CYP3A ENZYMES IN THE LIVER OF MALE RATS. J C Rowlands, R Hakak, M J J Konis, H W Strobel and T M Badger. Department of Pediatrics, University of Arkansas for Medical Sciences and Arkansas Children's Hospital Research Institute, Little Rock, AR.

#1932 UNDERSTANDING P450 3A4 COOPERATIVITY: A ROLE FOR RESIDUE F304. T L Domanski1, G R Harlow2 and J R Haipert1. 1University of Texas Medical Branch, Galveston, TX; 2Selectide, Tucson, AZ.

#1933 INDUCTION OF CYP3A BY 24(S),25-EPoxycholesterol IN PRIMARY CULTURED RAT HEPATOCYTES. T A Kocarek1, A B Reddy1 and T A Spencer2. 1Institute of Chemical Toxicology, Wayne State University, Detroit, MI; 2Department of Chemistry, Dartmouth College, Hanover, NH.

#1934 REGULATION OF CYTOCHROME P450 ISOZYMES BY MIREX AND CHLORDECONE AND CLONING AND EXPRESSION OF CYP3A25 GENE IN E.COLI. D Dai, R Bai, P Levi, R Rose and E Hodgson. Department of Toxicology, North Carolina State University, Raleigh, NC.

#1935 IMMUNOHISTOCHEMICAL LOCALIZATION OF CYTOCHROME P450 LMC5 (CYP3A27) IN RAINBOW TROUT G-1 TRACT. S-J Lee1, K Fischer2, O Hedstrom2, A Sen1, I Cok1, B Schefke1, J-L Wang-Buher1, C M Miranda1 and D R Bhuler1. 1Department of Environmental and Molecular Toxicology and 2College of Veterinary Medicine, Oregon State University, Corvallis, OR.

#1936 ROLE OF CYTOCHROME P450 4B1 IN 1,3-BUTADIENE (BD) OXIDATION IN LUNG MICROSOMES OF HUMANS, RATS AND RABBITS. R J Krause1, R M Philpot2 and A A Elfarra1. 1Department of Comp. Biosci., University of Wisconsin, Madison, WI; 2NIH, Research Triangle Park, NC.

#1937 THE STRUCTURE OF CYP2F1: A GENE THAT CODES FOR A HUMAN PULMONARY-SELECTIVE CYTOCHROME P450 ENZYME. B A Carr and G S Yost. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1938 IMPORTANCE OF MURINE CYP2F2 IN THE METABOLIC ACTIVATION OF NAPHTHALENE AND IN THE METABOLISM OF OTHER XENOBIOTICS. M A Shultz1, P V Choudary2 and A R Buckpitt1. 1Department of Molecular Biosciences, School of Veterinary Medicine and 2Department of Entomology, School of Agricultural and Environmental Sciences, University of California, Davis, CA.
THURSDAY AFTERNOON, MARCH 18
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS 208-210

SYMPOSIUM SESSION: ENDOGENOUS ESTROGENS AS CARCINOGENS: METABOLIC ACTIVATION THROUGH OXIDATVE METABOLISM

Sponsored By: The Carcinogenesis, Mechanisms and Comparative and Veterinary Specialty Sections

Chairpersons: James O. Yager, Johns Hopkins University, Baltimore, MD and Dharmon V. Singh, US EPA, Washington, DC

The major risk factors for human breast cancer include early age of menarche, late first full term pregnancy, nulliparity, late menopause, and to some degree, hormone replacement therapy. A common factor in all is prolonged and/or elevated estrogen exposure. The main mechanism proposed for estrogen carcinogenesis has been estrogen receptor-mediated, persistent cell proliferation associated with spontaneous replication errors. While estrogen-induced cell proliferation undoubtedly has a central role in the carcinogenic process, mounting evidence supports a hypothesis for a concomitant process in estrogen carcinogenesis involving indirect and direct genotoxicity originating from estrogen metabolites such as 16α-hydroxyestrone and the 4-hydroxy estradiol catechol. This symposium will address evidence in support of this hypothesis by summarizing the pathways of estrogen oxidative metabolism, addressing the formation of DNA damage caused by estrogen quinone metabolites and by reactive oxygen species arising from redox cycling processes supported by the estrogen catechols, and exploring evidence supporting a role for these metabolites in estrogen carcinogenesis. The symposium will include discussion of the possible effects of environmental chemical exposures on, and/or genetic polymorphisms in phase I and phase II metabolism of estrogens in breast cancer.

#1940 1:30 ENDOGENOUS ESTROGENS AS CARCINOGENS: METABOLIC ACTIVATION THROUGH OXIDATIVE METABOLISM. J D Yager and D V Singh. Division of Toxicological Sciences, Department of Environmental Health Sciences, Johns Hopkins School of Hygiene and Public Health, Baltimore, MD and US Environmental Protection Agency, Washington, DC.

#1941 1:40 GOOD DISRUPTERS, BAD DISRUPTERS. H L Bradlow, D W Sopkovics, K Auborn and M F Osborne. Strang Cancer Research Laboratory, New York, NY; Long Island Jewish Hospital, Floral Park, NY. Sponsor: J D Yager.


#1943 2:50 FORMATION, ACTIVATION and DNA DAMAGE BY 4-HYDROXY-ESTROGENS. J G Liehr. Stelhin Foundation for Cancer Research, Houston, TX. Sponsor: J D Yager.
DECREASED CATECHOL ESTROGEN PHASE II METABOLISM BY CATECHOL-O-METHYL TRANSFERASE (COMT) AS A RISK FACTOR FOR BREAST CANCER: MOLECULAR EPIDEMIOLOGIC AND EXPERIMENTAL EVIDENCE. J D Tozer and J A Avigne. Division of Toxicological Sciences, Department of Environmental Health Sciences, Johns Hopkins School of Hygiene and Public Health, Baltimore, MD.

OXYGEN RADICAL-NITRIC OXIDE REACTIONS IN OXIDATIVE TISSUE INJURY. B A Freeman. Departments of Anesthesiology and Biochemistry and Molecular Genetics, Center for Free Radical Biology, University of Alabama at Birmingham, Birmingham AL. Sponsor: E M Postlethwait.

OXIDANT AND ANTIOXIDANT REGULATION OF CELLULAR SIGNALING. H J Forman. University of Southern California, Los Angeles, CA.

INDUCTION OF CELL SIGNALLING CASCADES AND TRANSCRIPTION FACTORS IMPORTANT IN CONTROL OF PROLIFERATION OR APOPTOSIS IN PULMONARY EPITHELIAL CELLS EXPOSED TO REACTIVE OXYGEN OR NITROGEN SPECIES. Y M W Jansen and R P Souttanakis. University of Vermont, Department of Pathology, Burlington, VT. Sponsor: E M Postlethwait.

GENERATION OF LUNG SURFACE SECONDARY REACTIVE SPECIES DURING INHALED OXIDANT EXPOSURE. E M Postlethwait. Pulmonary & Critical Care Medicine, University of Texas Medical Branch, Galveston, TX.

3-D MAPPING OF OXIDANT-INDUCED TRACHEOBRONCHIAL EPITHELIAL CYTOTOXICITY. C Plopper¹, E Postlethwait², J Joad¹, D Hyde¹ and L Van Winkle¹. ¹University of California, Davis, CA; ²University of Texas Medical Branch, Galveston, TX.

#1946 1:40
#1947 2:10
#1948 2:40
#1949 3:10
#1950 3:40

THURSDAY AFTERNOON, MARCH 18
1:30 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOMS R02-R03

SYMPOSIUM SESSION: REACTIVE OXYGEN AND NITROGEN SPECIES IN THE LUNG; CELL ACTIVATION, INJURY AND APOPTOSIS

Sponsored By: The Inhalation Specialty Section
Chairperson: Edward M. Postlethwait, University of Texas Medical Branch, Galveston, TX

Reactive oxygen species (ROS; eg., O₂⁻, H₂O₂, Fe-O₂) and reactive nitrogen species (RNS; eg., "NO, "NO₂, ONOO⁻) represent important effectors in numerous toxicologic processes. Within the lung, exposure to ROS and RNS can occur (i) from direct inhalation of gas phase contaminants (eg., O₂, NO₂), (ii) as a consequence of xenobiotic metabolism or direct biomolecule reactions (eg., peroxynitrite, oxidant-induced peroxidation), (iii) inflammation, or (iv) due to toxicant-induced modulation of cellular processes (eg., disruption of mitochondrial function, upregulation of nitric oxide synthase). The cellular interactions with ROS and RNS are, at best, complex with either suppression or upregulation of cellular processes potentially occurring. These reactive species not only initiate direct oxidation of macromolecules but also critically mediate cellular homeostasis via a diverse spectrum of mechanisms. In addition, their actions may not be homogeneous especially with respect to microanatomic and intracellular concentrations. Cell-specific susceptibility is likely a function of the balance among toxicant-induced ROS/RNS production, the sensitivity of cell control mechanisms to changes in ROS/RNS concentrations, and the extent of detoxification processes. The goal is to present a state-of-the-art perspective of how ROS/RNS are generated during toxic insults, paradoxical actions of oxidants and antioxidants, how ROS and RNS mechanistically influence cell signalling and control, and how the distribution of lung injury is uniquely governed by both airspace surface phenomenon and specificity of cellular metabolism. Discussions will include specific biochemical interactions, mechanisms which lead to alterations in gene expression and cell cycle control, lung surface reactions, and the intact lung.

#1945 1:30

REACTIVE OXYGEN AND NITROGEN SPECIES: CELL ACTIVATION, INJURY and APOPTOSIS. E M Postlethwait. University of Texas Medical Branch, Galveston, TX.

Susceptibility, whether acquired or innate, can dictate the biological response to a chemical and gender is one such susceptibility factor. Many toxicological responses have been examined in the context of gender and the recent concern regarding the "hormones-like" properties of certain man-made chemicals has focused interest on how estrogen and chemicals with estrogenic properties can influence toxicological endpoints. Reproductive endpoints, however, have been of primary concern and there has been little examination of neurotoxic endpoints in this context despite evidence that estrogen can
have both neuroprotective as well as neurotoxic properties in the CNS. This workshop will present a general overview of estrogen and the mechanisms by which this hormone influences biological actions including a discussion of estrogen a and b receptor actions and how these actions impact toxicity. The remainder of the session will provide a more focused examination of estrogens' influences in the CNS and will examine its putative antioxidant actions, the role of receptor-mediated actions, direct membrane effects and neurosteroid properties in its neuroprotective actions. The influence of estrogenic chemicals on CNS injury utilizing well-established models of neurotoxic insult as well as their influence on brain structure in sexually-dimorphic areas of CNS will be examined. This workshop concerns endocrine disruption, estrogentic chemicals and injury processes. Supported by CDC/NCTR.

#1951 1:30 ENDOCRINE DISRUPTION AND NEUROTOXICITY: WHY TOXICOLOGISTS SHOULD BE CONCERNED ABOUT THE ACTIONS OF ESTROGENIC CHEMICALS IN THE CNS. D B Miller1 and S F Ali2. 1Toxicology & Molecular Biology Branch, Health Effects Laboratory Division, CDC/NIOSH, Morgantown, WV; 2Neurochemistry Laboratory, Division of Neurotoxicology, NCTR/FDA, Jefferson, AR.


#1953 2:15 THE ROLE OF ESTROGENS IN SHAPING BRAIN STRUCTURE. AC Scaliet, J Meredith, C Bennett, R L Rountree, W Tong1, C Weis, KB Delcos and R Newbold2. NCTR/FDA, Jefferson, AR; 2ROW Inc., Jefferson, AR; 2NIJEHS, Research Triangle Park, NC.

#1954 2:50 NEUROPROTECTIVE ACTIONS OF ESTROGEN IMPLICATIONS FOR EXPOSURE TO ESTROGENIC CHEMICALS. D B Miller1, J P O'Callaghan1, E A Johnson1, and S F Ali2. 1Toxicology & Molecular Biology Branch, Health Effects Laboratory Division, CDC/NIOSH, Morgantown, WV; 2Neurochemistry Laboratory, Division of Neurotoxicology, NCTR/FDA, Jefferson, AR.

#1955 3:25 NEUROPROTECTIVE ROLE OF ESTROGEN IN OXIDATIVE STRESS INDUCED NEURODEGENERATION: IMPLICATIONS FOR NEUROTOXIC INSULT. S F Ali1 and D B Miller2. 1Neurochemistry Laboratory, Division of Neurotoxicology, NCTR/FDA, Jefferson, AR; 2CDC/NIOSH, Morgantown, WV.

4:00 GENERAL DISCUSSION.

THURSDAY AFTERNOON, MARCH 18
130 PM - 4:30 PM
ERNEST N. MORIAL CONVENTION CENTER
ROOM 206
POSTER DISCUSSION SESSION: RESPIRATORY HYPERSENSITIVITY
Chairpersons: Ian Kimber, Zeneca Ltd., Macclesfield, Cheshire, UK and Jean P Regul, University of Minnesota, Duluth, MN
Displayed: 1:30 PM - 4:30 PM
Discussed: 2:30 PM - 4:30 PM

#1956 COMPLEMENT ACTIVATION IN TRIMELLITIC ANHYDRIDE (TMA)-INDUCED PULMONARY HYPERSENSITIVITY IN THE GUINEA PIG. C P Larsen and J P Regul. Toxicology Graduate Program and Department of Pharmacology, University of Minnesota, Duluth, MN.

#1957 ASSESSMENT OF RESPIRATORY SENSITIZING POTENTIAL OF ACID ANHYDRIDES BY CYTOKINE FINGERPRINTING. E V Warbrick, R J Dearman and I. Kimber. Zeneca Central Toxicology Laboratory, Macclesfield, UK.

#1958 TRIMELLITIC ANHYDRIDE (TMA) HYPERSENSITIVITY IN MICE AFTER DERMAL EXPOSURE AND INTRATRACHEAL (IT) CHALLENGE. E Boykin1, M Ward2, M J Selgrade1 and D Sailstad1. 1Experimental Toxicology Division, US EPA, Research Triangle Park, NC; 2Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#1959 PHYSICOCHEMICAL CHARACTERISTICS THAT CONTRIBUTE TO THE SENSITIZING POTENCY OF ACID ANHYDRIDES. J Lee, O T Macina, N B Sussman and M H Karol. Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#1960 TOLUENE DIISOCYANATE-INDUCED SKIN HYPERSENSITIVITY REACTIONS IN GUINEA PIGS SENSITIZED BY INHALATION OF THE CHEMICAL. K Ebina1, H Kawakatsu1, Y Shutoh1, K Maita1, R Lemus2 and M H Karol2. 1Institute of Environmental Toxicology, Mitsukaido, Ibaraki, Japan; 2Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#1961 THE RELATIONSHIP BETWEEN TOTAL IgE AND ENVIRONMENTAL FACTORS. V Pilasang, R Lemus, N B Sussman and M H Karol. Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.
ANALYSIS OF THE SPECIFICITY OF ANTI-BODY DETECTION IN RELATION TO DISSOXYANATE ASTHMA. S Gamaluddin1, A L Kennedy1, J-I. Malo2 and W E Brown1. 1Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 2Hopital Du Sacre-Coeur De Montreal, Canada. Sponsor: M FStock.

ALBUMIN CONJUGATES OF HEXAMETHYLENE DISSOXYANATE AND HEXAMETHYLENE DISSOXYANATE-BIURET DETECT ANTIBODIES IN CAR PAINTERS. R Lemos1, A V Wisnewski2, C A Redlich and M H Karol1. 1Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; 2Yale University School of Medicine, Occupational and Environmental Medicine Program and Pulmonary Critical Care Section, New Haven, CT.

INFLUENCE OF CARRAGEenan ON ANTI-PROTEIN ANTIBODY ISOTYPE DISTRIBUTION. R J Dearman1, D A Basketter2 and I Kimber1. 1Zeneca Central Toxicology Laboratory, Macclesfield, England; 2Unilever Safety and Environmental Assurance Centre, Sharnbrook, England.


IMMUNE RESPONSE TO ENZYMES IN THE MOUSE INTRanasAL TEST: STRAIN COMPARISON. K Sarlo3, J S Parris1, P A Horn1, E D Clark1, M K Robinson1, J A McCay2, V L Peachey2, J W Parrett, Jr2 and K L White, Jr2. 1The Procter & Gamble Company, Cincinnati, OH; 2ImmunoTox Inc., Richmond, VA.


THURSDAY EVENING, MARCH 18
5:00 PM - 6:00 PM
ERNEST N. MORIAL CONVENTION CENTER
LA LOUISIANE BALLROOM

FINAL NIGHT AWARDS PRESENTATION
At 5:00 PM, in the Ernest N. Morial Convention Center, the Society of Toxicology will honor the following 1999 Award Recipients:

<table>
<thead>
<tr>
<th>Award</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Michel Charbonneau</td>
</tr>
<tr>
<td>Colgate-Palmolive Visiting Professorship</td>
<td>Robert Chapin</td>
</tr>
<tr>
<td>Education</td>
<td>Jules Brodeur</td>
</tr>
<tr>
<td>Merit</td>
<td>Thomas Clarkson</td>
</tr>
<tr>
<td>Public Communications Award</td>
<td>Anna de Peyster</td>
</tr>
<tr>
<td>Zenece Travelling Award Lectureships</td>
<td>Alvaro Pago</td>
</tr>
</tbody>
</table>

Board of Publications Best Paper Awards in:

Fundamental and Applied Toxicology and Toxicological Sciences

C. A. Franklin
M. J. Wein
C. L. Baccal
C. M. Edwards
W. I. Manon
E. Edwards
E. J. O'Flaherty

Toxicology and Applied Pharmacology

S. K. Ravindar
M. G. Sotiri
T. J. Bucci
H. M. Mehandale


C. L. Zuch
D. J. O'Mara
D. A. Cery-Slechta
THURSDAY EVENING, MARCH 19
6:00 PM - 8:00 PM
(RECEPTION WILL BEGIN FOLLOWING THE SOT AWARDS PRESENTATION)
ERNEST N. MORIAL CONVENTION CENTER
LA LOUISIANE BALLROOM

FINAL NIGHT RECEPTION
Take advantage of the Final Night Reception to socialize and network with your colleagues. Participate in the festivities or sit back, relax and partake in the refreshments. This reception will be held at the Ernest N. Morial Convention Center and is free to all attendees.

FRIDAY & SATURDAY,
MARCH 19 & 20

FRIDAY & SATURDAY, MARCH 19 & 20
8:30 AM - 5:00 PM
HOTEL MONTELEONE

SATELLITE MEETING: SAFETY EVALUATION OF DRUGS FOR CENTRAL NERVOUS SYSTEM DELIVERY

Contacts: Carl P. LeBel, Ph.D., Amgen, Inc., Tel: 805-447-8281; Fax: 805-498-1425; Tony L. Yakesh, Ph.D., University of California, Tel: 619-543-5243; Fax: 619-543-6070.

The cerebrospinal fluid space represents a route that can be almost routinely accessed for acute and or continuous delivery of agents that might not otherwise pass the blood brain barrier without achieving massive systemic concentrations and accruing the attendant morbidity associated with peripheral toxicity. In spite of the diversity of the therapeutic targets, central nervous system (CNS) delivery of different drugs raise similar issues, including questions regarding: routes of distribution, tissue diffusion, preclinical test models, parameters of CNS injection, catheter materials, animal/human kinetics and safety evaluation. Given the broad utility of CNS delivery, there has surprisingly been little focus on general issues pertinent to its implementation. This symposium provides a forum for the review of current issues related to: CNS anatomy; CNS drug diffusion and kinetics; safety evaluation of CNS delivered drugs and consideration of the implementation of delivery for specific clinical targets.

For these reasons, we are organizing this meeting, entitled "Safety Evaluation of Drugs for Central Nervous System Delivery". This meeting will provide a basic background to issues pertinent to CNS drug delivery and the development of preclinical safety data. On the second day, there will be specific presentations on the development of drugs for this route of delivery. The speaker list is at present tentative, but we feel certain that those invited will enthusiastically attend. Further, it is our intent to have a meaningful presence of the FDA at this meeting.

This meeting is designed for toxicologists, pharmacokineticists, pharmaceutical chemists, physicians, and scientists from regulatory agencies interested in CNS-targeted drugs and their development. It is an opportunity to consider current thinking regarding the CNS and drug delivery.
Corporate Associate Members

(Mary Jo Vodicnik, Liaison)

Abbott Laboratories
Abbott Park, Illinois

Alcon Laboratories, Inc.
 Ft. Worth, Texas

AlliedSignal, Inc.
Morristown, New Jersey

American Petroleum Institute
Washington, D.C.

AMOCO Corporation
Chicago, Illinois

ARCO
Los Angeles, California

ARCO Chemical Company
Newtown Square, Pennsylvania

Astra Pharmaceuticals, L.P.
Wayne, Pennsylvania

Bayer
Stilwell, Kansas

Berlex Laboratories, Inc.
Montville, New Jersey

BP Chemicals, Inc.
Cleveland, Ohio

Bristol-Myers Squibb Company
New Brunswick, New Jersey

CanTox, Inc.
Mississauga, Ontario, Canada

Celanese, Ltd.
Warren, New Jersey

Charles River Laboratories
Wilmington, Massachusetts

Chevron Research & Technology Company
Richmond, California

Coca-Cola Company
Atlanta, Georgia

Colgate-Palmolive Company
Piscataway, New Jersey

Covance Laboratories, Inc.
Madison, Wisconsin

Dow AgroSciences
Indianapolis, Indiana

Dow Chemical Company
Midland, Michigan

Dow Corning Corporation
Midland, Michigan

Dynamac Corporation
Rockville, Maryland

E. I. du Pont de Nemours & Company
Newark, Delaware

Eastman Kodak Company
Rochester, New York

Elly Lilly & Company
Greenfield, Indiana

Exxon Biomedical Sciences, Inc.
East Millstone, New Jersey

Gillette Company, The
Boston, Massachusetts

Glaxo Wellcome, Inc.
Research Triangle Park, North Carolina

Hoechst Marion Roussel, Inc.
Kansas City, Missouri

Hoffmann-La Roche, Inc.
Nutley, New Jersey

Huntingdon Life Sciences
East Millstone, New Jersey

Johnson & Johnson
Corporation
New Brunswick, New Jersey

Lorillard Tobacco Company
Greensboro, North Carolina

Merck & Co., Inc.
West Point, Pennsylvania

Mobil Business Resources Corporation
Paulsboro, New Jersey

Monsanto Company
Skokie, Illinois

Novartis
East Harbor, New Jersey

Ortho Pharmaceutical Corporation
New Brunswick, New Jersey

Pfizer, Inc.
Groton, Connecticut

Pharmacia & Upjohn, Inc.
Kalamazoo, Michigan

Phillip Morris U.S.A.
Richmond, Virginia

Procter & Gamble Company,
The
Cincinnati, Ohio

Quintiles England, Ltd.
Herefordshire, U.K.

Rhodia, Inc.
Raleigh, North Carolina

Rhône-Poulenc Rorer
Collegeville, Pennsylvania

RJR Nabisco, Inc.
Winston-Salem, North Carolina

Sankyo Company, Ltd.
Tokyo, Japan

Sanofi Winthrop, Inc.
Malvern, Pennsylvania

Schering-Plough Research Institute
Kenilworth, New Jersey

Scearle
Skokie, Illinois

SmithKline Beecham Pharmaceuticals
King of Prussia, Pennsylvania

Southern Research Institute
Birmingham, Alabama
(Frederick Research Center, Frederick, Maryland)

Unilever Research U.S., Inc.
Edgewater, New Jersey

Union Carbide Corporation
Danbury, Connecticut

Warner-Lambert Company
(Parke-Davis Pharmaceutical Research)
Ann Arbor, Michigan

WIL Research Laboratories, Inc.
Ashland, Ohio

Wyeth-Ayerst Research
Chazy, New York

ZENECA, Ltd.
Macclesfield, Cheshire, U.K.
OFFICERS (1998-1999)

Steven D. Cohen, President
T: (860) 486-4265  F: (860) 486-4998
E-mail: cohen@uconnvm.uconn.edu

Jay I. Goodman, Vice President
T: (517) 353-9346  F: (517) 353-8915
E-mail: goodman3@pilot.msu.edu

Daniel Acosta, Jr, Vice President-Elect
T: (513) 558-3326  F: (513) 558-4372
E-mail: daniel.acosta@uc.edu

Mary Jo Vodicka, Treasurer
T: (317) 277-4706  F: (317) 276-5583
E-mail: Vodicka@lilly.com

Jacqueline H. Smith, Treasurer-Elect
T: (732) 873-6261  F: (732) 873-6009
E-mail: jsmith@fpe.erenj.com

A. Jay Gandolfi, Secretary
T: (520) 626-6696  F: (520) 626-2385
E-mail: gandolfi@u.arizona.edu

R. Michael McElhin, Past President
T: (973) 235-4527  F: (973) 235-4710
E-mail: michael.mcelhin@roche.com

COUNCILORS (1998-1999)

T: (973) 781-2341  F: (973) 781-2322
E-mail: robin.goldstein@pharma.novartis.com

T: (514) 737-4387  F: (514) 737-0497
E-mail: kerkvliet@mual.orst.edu

T: (302) 366-5023  F: (302) 366-6505
E-mail: James.A.Popp@dupontpharma.com

T: (409) 845-5988  F: (409) 862-4929
E-mail: ssafe@cvnm.tamu.edu

HEADQUARTERS

Society of Toxicology
1767 Business Center Drive, Suite 302
Reston, VA 20190-5332
T: (703) 438-3115  F: (703) 438-3113
E-mail: sothq@toxicology.org
http://www.toxicology.org

ANNUAL MEETING STAFF

Neil Dilllard
Abstracts/Program
Extension 322
sothq@toxicology.org

Betty Eidenmiller
Continuing Education/Student Awards
Education Programs
Extension 320
bettye@toxicology.org

Annette Flannery
Membership/Registration
Extension 306
annette@toxicology.org

Deborah Hyman
Media Relations/Public Affairs
Extension 327
dehyman@toxicology.org

Ann Kerstetter
Exhibits
Extension 332
annk@toxicology.org

Shawn Douglas Lamb
Executive Director
Extension 301
shawna@toxicology.org

Tonia Masson
Program/Contemporary Concepts
in Toxicology Meetings
Extension 317
tonia@toxicology.org

Deborah O'Keefe
Publications
Extension 313
dokeefe.adg@megascorp.com

Patricia Strong
Meetings/Membership
Extension 311
trish@toxicology.org

Clarissa Russell Wilson
Deputy Executive Director
Extension 326
clarissa@toxicology.org

PAST PRESIDENTS

1961-1962 Harold C. Hodge*
1962-1963 C. Boyd Shaffer
1963-1964 Paul S. Larson*
1964-1965 Harry W. Hays
1965-1966 Frederick Coulston
1966-1967...
Society of Toxicology
38th Annual Meeting

Elected and Appointed Committees

ELECTED COMMITTEES

Education
(A. Jay Gandolfi*)
- Elaine Knight (ad hoc)
- Charlene A. McQueen (1996-1999)
- Rick G. Schnellmann (1997-2000)
- David E. Williams (1997-2000)

Membership
(Nancy L. Kerkvliet*)
- Richard J. Bull (1998-2001)
- Kenneth Reuhl (1996-1999)
- Frank Welsch (1998-2001)

Nominating
(Daniel Acosta, Jr.)*
- Deborah A. Cory-Slechta (1998-1999)

APPOINTED COMMITTEES

Animals in Research (AIR)
(James A. Popp*)
- Mark E. Blazka (ad hoc)
- Ian Kimber (ad hoc)
- Robert A. Schatz (1998-2001)

Awards
- Kevin E. Driscoll (1997-1999)
- Albert E. Munson (1997-1999)

Board of Publications (BOP)
- Edward Bresnick, TAP Editor, Auditor
- Steven D. Cohen, President, (1998-1999)
- Curtis D. Klaassen, ToxSci Editor, Auditor
- Judith A. MacGregor (ad hoc)
- R. Michael McClain (ad hoc)
- Robert A. Roth (ad hoc)
- Bernard A. Schertz (1997-2001)
- Phillip G. Watanabe (1996-2000)

Committee on Public Communications (CPC)
(Mary Jo Vodicnik*)
- Scott W. Burchiel (1998-2001)
- Michael A. Gallo (1996-1999)
- David A. Lawrence (ad hoc)
- Ann de Peyster (1997-2000)
- David G. Serota (ad hoc)
- Michael P. Waalkes (1998-2001)

Continuing Education (CE)
(Stephen H. Safe*)
- Paul M. D. Foster, Chairperson (1998-1999), Member (1996-1999)
- Rakesh Dixit (1997-2000)
- Yvonne P. Dragun (1998-2001)
- Patricia E. Ganey (1998-2001)

Finance
- Mary Jo Vodicnik*, Treasurer, Chairperson (1998-1999)
- Steven D. Cohen, President (1998-1999)
- J. Donald deBethizy (1996-1999)
- Jay I. Goodman, Vice President (1998-1999)
SOCIETY OF TOXICOLOGY
38th Annual Meeting

APPOINTED COMMITTEES
(Continued)

Historian
(A. Jay Gandolfi*)

IUTOX Counselors
- Jack H. Dean (1998-2001)

Placement
(Nancy I. Kerkvliet*)
- Lorrene A. Buckley, Director (1998-1999), Member (1996-1999)
- Lois D. Leiman-McKeeman, Co-Director (1998-1999),
  Member (1997-2000)
- Dorothy A. Canter (1998-2001)
- Shayne C. Gad (1997-2000)
- Terry Gordon (1998-2001)
- Stephen B. Harris (1996-1999)
- Albert L. Kraus (1996-1999)
- Jose E. Manautou (1998-2001)

Program
- Daniel Acosta, Jr., Co-Chairperson (1998-1999)
- Bill Atchison (1997-2000)
- Michel Charbonneau (1996-1999)
- Joshua W. Hamilton (1998-2001)
- Dean P. Jones (ad hoc)
- Edward Lock (ad hoc)
- Rashmi S. Nair (1997-2000)
- Jack A. Reynolds (ad hoc)
- Mary Jane Selgrade (1998-2001)
- Calvin C. Willhite (1996-1999)
- Grushenok H. L. Wolfgang (ad hoc)

Regulatory Affairs and Legislative Assistance (RALA)
(Robin S. Goldstein*)
- Penelope A. Fenner-Crisp (1997-2000)
- Frank N. Kotsonis (1997-2000)
- Mary Jo Miller (1998-2001)
- Harry M. Olson (1998-2001)
- Christopher F. Wilkinson (ad hoc)

Task Force to Improve the Scientific Basis of Risk Assessment (RAF)
- Barbara D. Beck, Co-Chairperson (1998-1999), Member
  (1996-1999)
- Rory B. Conolly (1997-1999)
- Jack H. Dean (1996-1999)
- Elaine Faustman (1996-1999)
- Clay B. Frederick (1998-1999)
- Frederick R. Johanssen (1996-1999)

Toxicology Education Foundation (TEF)
Board of Trustees
- James S. Bus, Past President (1997-1999)
- Mary E. Davis, Past Treasurer (1997-1999)
- John Doull, Member-at-Large (1997-1999)
- David L. Eaton, Past Secretary (1998-2000), Vice President
  (1998-1999)
- Marion R. Ehrlich, Member-at-Large (1998-2001)
- Claude McGowan, Liaison, Education Committee (1998-1999)
- Charlene McQueen (ad hoc)
- Hariharan M. Meihendal, Member-at-Large (1997-2000),
  Secretary/Treasurer (1998-1999)
- David E. Williams, Liaison, K-12 Education Subcommittee
  (1998-1999)

World Wide Web Task Force (WWWTF)
(James A. Popp*)
- Mary E. Davis, Chairperson (1998-1999), Member (1997-1999)

(*Council Liaison)
SOCIETY OF TOXICOLLOGY
38th Annual Meeting

APPOINTED COMMITTEES
(Continued)

Council Subcommittee for Contemporary Concepts in Toxicology
- Mary Jo Vodicnik (1998-1999)

Council Subcommittee for Regional Chapter Funding
- Jacqueline H. Smith, Chairperson (1998-1999)
- Mary Jo Vodicnik (1998-1999)

Council Subcommittee for Non-SOT Meeting Sponsorship
- Jacqueline H. Smith, Chairperson (1998-1999)
- Mary Jo Vodicnik (1998-1999)

Congressional Fellow Review Subcommittee
- Penelope A. Fenner-Crisp (1998-1999)
- Shawn D. Lamb (1998-1999)

Education Subcommittee for K-12 Education
(A. Jay Gandolfi*)
- David E. Williams, Chairperson (1998-1999)
- Ann de Peyster (1997-2000)
- Alan Deary (ad-hoc)
- Mary Dereski (1998-2001)
- Kevin E. Driscoll (1997-1999)
- Michael A. Gallo (1998-2001)
- Juliane P. Hill (1997-1999)
- Elaine Knight (ad-hoc)
- Charlene A. McQueen (ad-hoc)
- Hollie J. Swanson (ad-hoc)
- Garold S. Yost (ad-hoc)

Education Subcommittee for Minority Programs
(A. Jay Gandolfi*)
- Rick G. Schnellmann, Chairperson (1998-1999)
- Myrtle Davis (ad-hoc)
- Mike Galvin (ad-hoc)
- Carlotta E. Groves (1997-2000)
- Elaine Knight (ad-hoc)
- Jose E. Manautou (1998-2001)

(*Council Liaison)
Society of Toxicology
38th Annual Meeting

Officers - Specialty Sections

(Robin S. Goldstein, Liaison)

Comparative and Veterinary (106*)
- President: Cecil Fite-George Brownie
- Vice President: Frederick W. Oehme
- Vice President-Elect: David C. Dorman
- Secretary/Treasurer: Stephen B. Hooser
- Councillors: Vernon L. Carter, Jr. (Past President), Robert H. Poppenga, William M. Valentine

Carcinogenesis (283)
- President: James E. Klaunig
- Vice President: James D. Yager
- Vice President-Elect: Yvonne F. Dragan
- Secretary/Treasurer: Barbara S. Shane
- Councillors: William M. Baird (Past President), Joseph R. Landolph, John DiGiovanni

Epidemiology (New Specialty Section)
- President: Richard Parent
- President-elect: David Lilienfeld
- Vice President: Carlo Tamburro
- Secretary/Treasurer: Brian Hughes
- Councillors: Arno Schecter, Ed Ohanian, Tae Guidotti

Food Safety (119)
- President: Thomas D. Trautman
- Vice President: Richard Lane
- Vice President-Elect: Joseph A. Scimeca
- Secretary/Treasurer: David E. Williams
- Secretary/Treasurer-Elect: Nancy I. Kerkvliet
- Councillors: Sam Kacew (Past President), Lois A. Kotkoskie, Lori A. Fix, Ken A. Yoss

Immunotoxicology (109)
- President: Kathleen E. Rodgers
- Vice President: Judith T. Zelikoff
- Vice President-Elect: DOI R. Germolec
- Secretary/Treasurer: Robert V. House
- Councillors: Scott W. Burchiel (Past President), Stephen B. Prueg, John Barnett

Inhalation (216)
- President: David B. Wachtel
- Vice President: Kevin E. Driscoll
- Vice President-Elect: Michele M. Schaper
- Secretary/Treasurer: Gregory L. Finch
- Councillors: Michele A. Medinsky (Past President), Edward M. Postlethwait, Timothy D. Landry, Janet M. Benson, Daniel L. Morgan

In Vitro (184)
- President: Rodger D. Curran
- Vice President: Paul M. Silber
- Vice President-Elect: Alan M. Goldberg
- Secretary/Treasurer: Nancy Ann Monteiro-Riviere
- Councillors: Joanne Zurlo (Past President), Charlene A. McQueen, Monica Valentinovic

Mechanisms (353)
- President: James F. Kehrer
- Vice President: Gary S. Yost
- Vice President-Elect: James L. Stevens
- Secretary/Treasurer: Kendall Wallace
- Councillors: Mary Vore (Past President), Rick G. Schnellmann, Dan Liebler

Metals (95)
- President: Peter L. Goering
- Vice President: Michael P. Walske
- Vice President-Elect: Katherine S. Squibb
- Secretary/Treasurer: Elaine M. Faustman
- Councillors: William O. Berndt (Past President), Maryka H. Bhattacharya, David Thomas

Molecular Biology (190)
- President: Michael S. Denison
- Vice President: Kenneth Ramos
- Vice President-Elect: Christopher A. Bradfield
- Secretary/Treasurer: John A. VandenHeuvel
- Councillors: Curtis J. Omiecinski (Past President), William B. Mattes, Val Gulotta
- Student Representative: Khiersten M. Gressani

Neurotoxicology (238)
- President: Janice E. Chambers
- Vice President: Thomas R. Guiltarte
- Vice President-Elect: William D. Atchison
- Secretary/Treasurer: Kevin M. Croffen
- Councillors: Michael Aschner (Past President), Larry P. Sheets, M. Christopher Newland

Occupational Health (116)
- President: Ross E. Johnson, Jr.
- Vice President: John G. Keller
- Vice President-Elect: Shannon C. Gad
- Secretary/Treasurer: Calvin C. Willhite
- Councillors: Gerald L. Kennedy, Jr., Michael J. Olson, Edward V. Sargent

Regulatory and Safety Evaluation (326)
- President: Sharon J. Nordup
- Vice President: Robert E. Osterberg
- Vice President-Elect: Judith A. MacGregor
- Secretary/Treasurer: Hilary V. Sheevers
- Councillors: D. Reid Patterson (Past President), Theodore M. Farber, Harry M. Olson

Reproductive and Developmental (219)
- President: Betsy D. Carlton
- Vice President: Paul M. D. Foster
- Vice President-Elect: Rita Loch-Caruso
- Secretary/Treasurer: John M. Rogers
- Councillors: Robert J. Kavlock (Past President), Warren W. Ku, Marion G. Miller

Risk Assessment (338)
- President: Clay B. Frederick
- Vice President: Robert J. Rubin
- Vice President-Elect: Dennis J. Paustenbach
- Secretary/Treasurer: Susan P. Felter
- Councillors: Rory B. Conolly (Past President), Michael Bolger, Matthew S. Bogdanoff

(*Membership Totals - 1999 Dues Renewals)
SOCIETY OF TOXICOLOGY
38th Annual Meeting

Officers—Regional Chapters

(Stephen H. Safe, Liaison)

Allegheny-Erie
- President: Anna A. Shvedova
- President-Elect: Philip Leber
- Vice President: Veronica Weaver
- Secretary/Treasurer: Maryanne F. Stock
- Councillors: James A. Barter (Past President), John H. Batula, Mark W. Reesor, Michael C. Savides

Central States
- President: David Warren
- President-Elect: George P. Casale
- Vice President: To be elected
- Secretary/Treasurer: Richard D. Dukor
- Councillors: John A. Thacker (Past President), Patrick Iverson, Gregory A. Reed, Shivendra Shukla, Paul Sternmer

Gulf Coast
- President: John A. Thomas
- Vice President: Andrij Holian
- Vice President-Elect: Sernine Lau
- Secretary: Elizabeth Maull
- Treasurer: Mary Ann Smith
- Councillors: Evelyn C. Tiffany-Castiglioni (Past President), David Steup

Lake Ontario
- President: Claire C. Gavin
- Vice President: Andrea J. Jacobs
- Secretary: Dale Marino
- Treasurer: Ellen C. Henry
- Councillors: Raymond M. David (Past President), Laurie A. Fiorica, Douglas C. Topping

Mid-Atlantic
- President: Robin S. Goldstein
- Vice President: Sue M. Ford
- Vice President-Elect: Timothy P. Coogan
- Secretary/Treasurer: Charles S. Schwartz
- Councillors: James A. Pickrell (Past President), Lynda Ross, Peter J. Harvison, Richard B. Schlesinger
- Student Councillor: Janeen R. Azare

Midwest
- President: Robert V. House
- President-Elect: Bernadette Ryan
- Secretary: Tony Kong
- Treasurer: David L. McCormick
- Councillors: Elizabeth H. Jeffery (Past President), Sabrina Morton, Paul Newton, Peter B. Senese, Kevin D. Williams
- Student Councillor: Sandhya Mandelkar

Mountain West
- President: Craig D. Ricker
- Vice President: Patricia B. Hoyer
- Vice President-Elect: Dennis R. Peterson
- Secretary: Mark A. Nelson
- Treasurer: William K. Nichols
- Councillors: Gary Yost (Past President), Roger A. Coulome, Jr., Laurie G. Hudson
- Student Councillors: Sherri Borman, Kon Skordos

National Capital
- President: Carole A. Kimmel
- President-Elect: Joa D. Cavagnar
- Secretary: Ronald S. Slesinski
- Treasurer: David Neumann
- Councillors: Lorraine E. Treadwell (Past President), Scott R. Baker, Barbara F. Bass, John G. Keller, Robert J. Rubin, Walter Kozumbo

North Carolina
- President: Michael L. Cunningham
- President-Elect: Robert J. Kavlock
- Vice President: Timothy R. Fennell
- Secretary/Treasurer: Glenda J. Moser
- Councillors: Thomas L. Goldsworth (Past President), Rich Miller, Robert C. Sills
- Student Councillor: Laura N. Healy

Northeast
- President: Kim Boekelheide
- President-Elect: Susan G. Emeigh Hart
- Vice President: Robert Schatz
- Secretary/Treasurer: Michael L. Biehl
- Councillors: William P. Petercich (Past President), Jose M. Manoupolou, Warren K.

Northern California
- President: Marion G. Miller
- President-Elect: To be elected
- Vice President: To be elected
- Secretary: Linval R. De Paas
- Treasurer: Susan A. Rice
- Councillors: John P. Christopher (Past President), Anne E. Chester, Mary E. Prevo

Ohio Valley
- President: Darol E. Dodd
- Vice President: David Hein
- President-Elect: Joe Siglin
- Secretary/Treasurer: Carl L. Potter
- Councillors: James E. Klumpp (Past President), Howard Glauer, Lisa Kamendulis, August Wilke

Pacific Northwest
- President: Richard T. Oka
- Vice President: Nancy L. Kerkmann
- Vice President-Elect: Brian D. Thrall
- Secretary/Treasurer: Jeffrey J. Jenkins
- Councillors: Terry J. Kavanagh (Past President), David L. Eaton, Steven G. Gilbert

South Central
- President: Carey N. Pope
- Vice President: Galen R. Wanger
- Vice President-Elect: Andrew C. Scala
- Secretary: John C. Matthews
- Treasurer: Steven B. Prust
- Councillors: Bernard A. Schweitz (Past President), Betsy Blaylock, Neil R. Punkt, Daniel K. Schlenk

Southeastern
- President: Randall O. Manning
- President-Elect: Evan Gallagher
- Secretary/Treasurer: Alan S. Susten
- Councillors: Robert A. Young (Past President), Lawrence K. Curtis, Ronald T. Riley, Eric A. Shulze

Southern California
- President: Stephen B. Harris
- Vice President: Jill Ryer-Powder
- Vice President-Elect: David Montei
- Secretary/Treasurer: Tina Hacker
- Councillors: Carl LeBel (Past President), Grace Funman, Diane Meacher, Greg Stevens, Mark Zorbas
The Society of Toxicology has established a Toxicology Media Resource Program to assist journalists in identifying or locating expert toxicologists who can provide factual information on issues of public concern. The Media Resource Specialists provide information based on their own credentials and do not represent the views of the Society of Toxicology. If you require further assistance with a toxicology-related topic, please contact Public Affairs Director Deborah Hyman at SOT Headquarters at (703) 438-3115, ext. 327.

**SPECIALTIES**

**Comparative and Veterinary**
- Roger McClellan

**Carcinogenesis**
- James Bond
- Richard Bull
- David Eaton
- Jay Goodman
- Michael McClain
- Henry Pitot
- James Popp
- Robert Rubin
- Jacqueline Smith

**Epidemiology**
- Ellen Silbergeld

**General Toxicology**
- Linda Bimbam
- David Eaton
- Michael McClain

**Immunotoxicology**
- Joy Cavagnaro
- Jack Dean
- Jay Gandolfi (hypersensitivity)
- Nancy Kerkvliet
- Kathleen Rodgers

**Inhalation/Pulmonary**
- Barbara Beck
- James Bond
- Gary Boorman (pulmonary pathology)
- Robert Drew
- Roger McClellan
- John Morris
- Robert Phalen
- Gary Yost

**In Vitro**
- Daniel Acosta, Jr.
- Jay Gandolfi
- Kenneth Ramos
- Jacqueline Smith

**Kidney Toxicity**
- William Bermdt
- Steven Cohen
- Mary Davis
- Jay Gandolfi
- Robin Goldstein

**Liver Toxicity**
- Steven Cohen
- Mary Davis
- Jay Gandolfi
- Robin Goldstein
- Hari Mehendale

**Mechanisms**
- Daniel Acosta, Jr.
- William Bermdt
- Linda Bimbam
- Jay Gandolfi
- Hari Mehendale
- James Popp
- Kenneth Ramos
- Stephen Safe
- Ellen Silbergeld
- Gary Yost

**Metabolism/Toxicokinetics**
- Linda Bimbam
- Raymond Novak

**Molecular**
- Henry Pitot
- Kenneth Ramos
- Robert Rubin
- Raymond Novak (cell signaling, gene expression)
- Gary Yost

**Neurotoxicity**
- Joel Mattsson
- Ellen Silbergeld
- William Slikker
- Hugh Tilson

**Regulatory Toxicology/Regulatory Affairs/Safety Evaluation**
- Daniel Acosta, Jr. (drugs/addictive agents)
- Gregory Allgood
- Richard Bull
- Joy Cavagnaro (drugs and biologics)
- Jack Dean (drugs)
- Michael Dourson
- Robin Goldstein (drugs)
- James Lamb
- Michael McClain (drugs)
- Kathleen Rodgers (drugs)
- Robert Rubin
- Mary Jo Vodicnik (drugs)

**Reproductive/Developmental**
- Robert Chapin
- George Daston
- Carole Kimmel
- James Lamb
- Hugh Tilson (developmental neurotoxicology)

**Risk Assessment**
- Barbara Beck
- Michael Bolger
- James Bond
- Richard Bull
- John Christopher
- Rory Conolly
- Michael Dourson
- Jay Goodman
- Carole Kimmel
- James Lamb
- Roger McClellan
- Robert Rubin
- Jacqueline Smith
SOCIETY OF TOXICOLOGY
38th Annual Meeting

Media Resource Specialists
(Continued)

ISSUES

Air Pollution
- James Bond
- Robert Drew (air quality standards)
- Roger McClellan (air quality standards—environmental and occupational)
- John Morris
- Robert Phalen

Animal Studies/Animals in Research
- Gary Boorman
- Stephen DiZio
- Robert Phalen

Biotechnology/Biopharmaceutical Toxicology
- Joy Cavagnaro

Chemical-Chemical Interactions
- Steven Cohen
- Jay Gandolfi

Chlorine-Based Compounds
- Richard Bull
- Rory Conolly
- Jay Gandolfi (also fluorine compounds)
- H. B. Matthews
- Hugh Tilson (PCBs)

Dioxins
- Michael Bolger
- Rory Conolly
- David Eaton
- Nancy Kerkvliet
- Kenneth Ramos
- Eileen Silbergeld
- Hugh Tilson

Endocrine Disrupters
- Linda Birnbaum
- Michael Bolger
- James Bus
- Robert Chapin
- Rory Conolly
- Michael Gallo
- Nancy Kerkvliet
- James Lamb

Food Additives/Food Safety/Food Toxins
- Gregory Allgood
- Michael Dourson
- David Eaton (especially aflatoxins)
- Robert Rubin

Free Radicals/Oxidative Stress/Antioxidants
- Gregory Allgood
- James Kehrer

Industrial Chemical Toxicology
- James Bus

Medical Devices
- Kathleen Rodgers
- Stephen Safe

Metals
- Barbara Beck
- William Berndt
- Michael Bolger
- Jay Gandolfi
- Hugh Tilson (lead, methyl mercury)

Natural Toxins
- Michael Bolger
- Joel Mattsson

Pesticides
- James Bus
- James Lamb
- H. B. Matthews
- Kathleen Rodgers
- Stephen Safe

Radiation
- Gary Boorman (EMF exposure)

Solvents
- Mary Davis

Water Pollution
- Richard Bull

Validation of Alternative Methods
- Joy Cavagnaro

SOT CHAPTER GEOGRAPHICAL DISTRIBUTION

Central States
- William Berndt (NE)

Gulf Coast (Texas)
- James Kehrer
- Kenneth Ramos
- Stephen Safe
- William Slikker

Michigan
- James Bus
- Jay Goodman
- Joel Mattsson
- Raymond Novak

Mid-Atlantic
- Jack Dean (PA)
- Michael Gallo (NJ)
- Robin Goldstein (NJ)
- Michael McClain (NJ)
- James Popp (PA)
- Jacqueline Smith (NJ)

Midwest
- Henry Pitot (WI)

Mountain West
- Jay Gandolfi (AZ)
- Gary Yost (UT)
### Media Resource Specialists

(Continued)

<table>
<thead>
<tr>
<th>National Capital</th>
<th>Northeast</th>
<th>Pacific Northwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Bolger (DC)</td>
<td>Barbara Beck (MA)</td>
<td>Richard Bull (WA)</td>
</tr>
<tr>
<td>Joy Cavagnaro (MD)</td>
<td>Steven Cohen (CT)</td>
<td>David Eaton (WA)</td>
</tr>
<tr>
<td>Robert Drew (DC)</td>
<td>John Morris (CT)</td>
<td>Nancy Kerkvliet (OR)</td>
</tr>
<tr>
<td>Carole Kimmel (DC)</td>
<td>Northern California</td>
<td>South Central</td>
</tr>
<tr>
<td>James Lamb (VA)</td>
<td>John Christopher</td>
<td>Hari Mehidandie (LA)</td>
</tr>
<tr>
<td>Robert Rubin (MD)</td>
<td>Ohio Valley or Allegheny-Erie</td>
<td>Southern California</td>
</tr>
<tr>
<td>Ellen Silbergeld (MD)</td>
<td>Daniel Acosta, Jr. (OH)</td>
<td>Robert Phalen</td>
</tr>
<tr>
<td></td>
<td>Gregory Allgood (OH)</td>
<td>Kathleen Rodgers</td>
</tr>
<tr>
<td></td>
<td>George Deston (OH)</td>
<td>Stephen DiZio</td>
</tr>
<tr>
<td></td>
<td>Mary Davis (WV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Michael Dourson (OH)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mary Jo Vodicnik (IN)</td>
<td></td>
</tr>
</tbody>
</table>

North Carolina
- Linda Birnbaum
- James Bond
- Gary Boorman
- Robert Chapin
- Rory Conolly
- H. B. Matthews
- Roger McSorlan
- Hugh Tilson
SOCIETY OF TOXICOLOGY
38th Annual Meeting

Society of Toxicology Awards

The Society of Toxicology annually presents the Achievement Award, the Arnold J. Lehman Award, the Board of Publications Awards for the Best Paper in Toxicology and Applied Pharmacology, the Best Paper in Fundamental and Applied Toxicology, the Best Paper in Toxicological Sciences, the Merit Award, the Public Communications Award, and the Toxicology Education Award. The Robert L. Dixon Award is presented every three years. Special awards may also be presented at the Council’s discretion.

- The Achievement Award is presented to a SOT member who has less than 15 years of experience since obtaining his/her highest degree and who has made significant contributions to toxicology. This award consists of a plaque and a cash stipend.

- The Arnold J. Lehman Award is presented to recognize an individual who has made a major contribution to risk assessment and/or the regulation of chemical agents, including pharmaceuticals. The contribution may have resulted from the application of sound scientific principles to regulation and/or from research activities that have significantly influenced the regulatory process. The nominee may be employed in academia, government or industry and must be a SOT member. This award consists of a plaque and a cash stipend.

- The Board of Publications Awards for the Best Paper in Toxicology and Applied Pharmacology, the Best Paper in Fundamental and Applied Toxicology, and the Best Paper in Toxicological Sciences are presented to the author(s) of the best paper published in each of the official SOT publications during a 12-month period ending with the June issues of the year preceding the Annual Meeting at which the awards are presented. The author(s) need not be a SOT member. Submissions should include a one-page summary of author’s contributions to the science of toxicology and a copy of the article for which the nomination is being made. Any SOT member may submit one title for consideration per journal award. In addition, the titles of no more than six papers to be considered for each award are submitted by the editors of each official SOT publication. The Board of Publications will evaluate all papers submitted. These awards consist of a plaque and a cash stipend.

- The Merit Award is presented to a SOT member in recognition of a distinguished career in toxicology. This award consists of a plaque and a cash stipend.

- The Public Communications Award is presented to an individual who has made a major contribution to broadening public awareness of toxicological issues through the media. The award should reflect accomplishments made over a significant period of time. Qualifying media include: books, brochures, continuing education courses, data bases, extension bulletins, magazines, newspapers (local or national), public forums and presentations, radio and television scripts, and workshops. This award consists of a plaque and a cash stipend.

- The Toxicology Education Award is presented to an individual who is distinguished by the teaching and training of toxicologists and who has made significant contributions to education in the field of toxicology. This award consists of a plaque and a cash stipend.

- The Robert L. Dixon award takes applications from graduate students in the area of reproductive toxicology and carries a stipend of $2,000 to enable students to attend the International Congress on Toxicology meeting. It is available every three years.

All nominations — along with a CV, supporting documentation and other relevant data — must be submitted in writing to the Chairperson of the Awards Committee c/o SOT Headquarters. Optional Nomination Forms are available from SOT Headquarters. Each nomination should be submitted by a sponsor and seconder, and up to three additional supporters who are SOT members. Nominations may be submitted at any time; however, the deadline for consideration of a nomination is October 1, 1999 preceding the Annual Meeting at which the award will be presented. Nominations received after October 1, 1999 will be considered for the following year. The files of unsuccessful nominees are considered for two additional years unless the sponsor withdraws the nomination. A complete update of each file is required for renominations after that time. The Awards Committee reviews all material received and makes recommendations to the Council.
Society of Toxicology
38th Annual Meeting

Society of Toxicology Awards
(Continued)

<table>
<thead>
<tr>
<th>Achievement</th>
<th>1967</th>
<th>Gabriel L. Plaa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td></td>
<td>Allan H. Conney</td>
</tr>
<tr>
<td>1969</td>
<td></td>
<td>Samuel S. Epstein</td>
</tr>
<tr>
<td>1970</td>
<td></td>
<td>Sheldon D. Murphy</td>
</tr>
<tr>
<td>1971</td>
<td></td>
<td>Yves Alarie</td>
</tr>
<tr>
<td>1972</td>
<td></td>
<td>Robert L. Dixon</td>
</tr>
<tr>
<td>1973</td>
<td></td>
<td>(No Award)</td>
</tr>
<tr>
<td>1974</td>
<td></td>
<td>Morris F. Cranmer</td>
</tr>
<tr>
<td>1975</td>
<td></td>
<td>Ian C. Munro</td>
</tr>
<tr>
<td>1976</td>
<td></td>
<td>Curtis D. Klaassen</td>
</tr>
<tr>
<td>1977</td>
<td></td>
<td>James E. Gibson</td>
</tr>
<tr>
<td>1978</td>
<td></td>
<td>Raymond D. Harbison</td>
</tr>
<tr>
<td>1979</td>
<td></td>
<td>Michael R. Boyd</td>
</tr>
<tr>
<td>1980</td>
<td></td>
<td>Philip G. Watanabe</td>
</tr>
<tr>
<td>1981</td>
<td></td>
<td>(No Award)</td>
</tr>
<tr>
<td>1982</td>
<td></td>
<td>Frederick P. Guengerich</td>
</tr>
<tr>
<td>1983</td>
<td></td>
<td>(No Award)</td>
</tr>
<tr>
<td>1984</td>
<td></td>
<td>Melvin E. Andersen</td>
</tr>
<tr>
<td>1985</td>
<td></td>
<td>Alan R. Buckpitt</td>
</tr>
<tr>
<td>1986</td>
<td></td>
<td>Sam Kacew</td>
</tr>
<tr>
<td>1987</td>
<td></td>
<td>James S. Bus</td>
</tr>
<tr>
<td>1988</td>
<td></td>
<td>Jeann M. Manson</td>
</tr>
<tr>
<td>1989</td>
<td></td>
<td>James P. Kehrer</td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>Michael P. Waalkes</td>
</tr>
<tr>
<td>1991</td>
<td></td>
<td>Debra Lynn Laskin</td>
</tr>
<tr>
<td>1992</td>
<td></td>
<td>Michael P. Holzapfel</td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td>David L. Eaton</td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td>James L. Stevens</td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td>Lucio G. Costa</td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td>Kenneth Ramos</td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td>Kevin E. Driscoll</td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td>Rick G. Schellman</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td>Michel Charbonneau</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Merit</th>
<th>1966</th>
<th>Henry F. Smyth, Jr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td></td>
<td>Arnold J. Lehman</td>
</tr>
<tr>
<td>1968</td>
<td></td>
<td>R. T. Williams</td>
</tr>
<tr>
<td>1969</td>
<td></td>
<td>Harold C. Hodge</td>
</tr>
<tr>
<td>1970</td>
<td></td>
<td>Don J. Irish</td>
</tr>
<tr>
<td>1971</td>
<td></td>
<td>Kenneth P. DuBois</td>
</tr>
<tr>
<td>1972</td>
<td></td>
<td>O. Garth Fitzhugh</td>
</tr>
<tr>
<td>1973</td>
<td></td>
<td>Herbert E. Stokinger</td>
</tr>
<tr>
<td>1974</td>
<td></td>
<td>William B. Deichmann</td>
</tr>
<tr>
<td>1975</td>
<td></td>
<td>Frederick Coulston</td>
</tr>
<tr>
<td>1976</td>
<td></td>
<td>Venl K. Rowe</td>
</tr>
<tr>
<td>1977</td>
<td></td>
<td>Harry W. Hays</td>
</tr>
<tr>
<td>1978</td>
<td></td>
<td>Julius H. Cohn</td>
</tr>
<tr>
<td>1979</td>
<td></td>
<td>David W. Fassett</td>
</tr>
<tr>
<td>1980</td>
<td></td>
<td>Bernard L. Oser</td>
</tr>
<tr>
<td>1981</td>
<td></td>
<td>John H. Weisburger</td>
</tr>
<tr>
<td>1982</td>
<td></td>
<td>Harold M. Peck</td>
</tr>
<tr>
<td>1983</td>
<td></td>
<td>Perry J. Gehring</td>
</tr>
<tr>
<td>1984</td>
<td></td>
<td>Tom S. Miyasaka</td>
</tr>
<tr>
<td>1985</td>
<td></td>
<td>Carol S. Weil</td>
</tr>
<tr>
<td>1986</td>
<td></td>
<td>Ted A. Loomis</td>
</tr>
<tr>
<td>1987</td>
<td></td>
<td>Fumiaki Yamada</td>
</tr>
<tr>
<td>1988</td>
<td></td>
<td>Seymour L. Friess</td>
</tr>
<tr>
<td>1989</td>
<td></td>
<td>Wayland J. Hayes, Jr.</td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>Sheldon D. Murphy</td>
</tr>
<tr>
<td>1991</td>
<td></td>
<td>Yoshio Narahashi</td>
</tr>
<tr>
<td>1992</td>
<td></td>
<td>W. Norman Aldridge</td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td>John Doull</td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td>Ernest Hodgson</td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td>Robert A. Scala</td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td>Gabriel L. Plaa</td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td>Mary O. Andar</td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td>John A. Thomas</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td>Thomas Clarkson</td>
</tr>
</tbody>
</table>

Arnold J. Lehman

1980        |      | Allan H. Conney |
1981        |      | Gabriel L. Plaa |
1982        |      | Gary M. Williams |
1983        |      | David P. Rall |
1984        |      | Tibor Balasz |
1985        |      | Frederick Coulston |
1986        |      | Gerrit Johannes Van Etch |
1987        |      | John P. Frawley |
1988        |      | Kundan S. Khera |
1989        |      | Richard H. Adamson |
1990        |      | Harold C. Grice |
1991        |      | Bernard A. Schwartz |
1992        |      | Roger G. McClellan |
1993        |      | Thomas W. Clarkson |
1994        |      | Bruce Ames |
1995        |      | Emil A. Pfizer |
1996        |      | John F. Rosen |
1997        |      | (No Award) |
1998        |      | Helmut Alfred Greim |
Society of Toxicology
38th Annual Meeting

Society of Toxicology Awards
(Continued)

Education
1975 .................................................. Harold C. Hodge
1976 .................................................. Ted A. Loomis
1977 .................................................. Robert B. Porey
1978 .................................................. (No Award)
1979 .................................................. Sheldon M. Murphy
1980 .................................................. Herbert H. Cornish
1981 .................................................. Frederick Sperling
1982 .................................................. Lloyd W. Hazelton
1983 .................................................. Julius M. Cook
1984 .................................................. Frank Guthrie, Ernest Hodgson
1985 .................................................. William B. Buck
1986 .................................................. Robert J. Krieger
1987 .................................................. Gabriel L. Plaa
1988 .................................................. John Autian
1989 .................................................. Tom S. Miya
1990 .................................................. Charles H. Hine
1991 .................................................. Hanaperter R. Witschi
1992 .................................................. Dean E. Carter
1993 .................................................. Curtis D. Klaassen
1994 .................................................. Robert A. Neal
1995 .................................................. William Carlton
1996 .................................................. Robert Snyder
1997 .................................................. Albert E. Munson
1998 .................................................. David J. Holtbrook
1999 .................................................. Jules Brodeur

Frank R. Blood
1974 .................................................. Yves Alarie
1975 .................................................. Donald J. Ecobichon, G. J. Johnstone, O. Hutzinger
1976 .................................................. Richard D. Brown
1977 .................................................. J. Dedinas, George D. DiVincenzo, C. J. Kaplan
1978 .................................................. Perry J. Gehring, E. O. Madrid, G. R. McGowan, Philip G. Watanabe
1980 .................................................. Jerold A. Last, Peter F. Moore, Otto G. Raabe, Brian K. Tarkington
1981 .................................................. Yves Alarie, Martin Brady, Christine Dixon, Meryl Karol
1982 .................................................. Melvin E. Andersen, Michael L. Gargas, Lawrence J. Jenkins, Jr., Robert A. Jones
1983 .................................................. Henry D. Heck
1984 .................................................. Erik Dybing, Sidney Nelson, Erik Soderlund, Christof Voehr
1985 .................................................. Nobumasa Imura, Masae Inokawa, Kyoko Miura
1986 .................................................. Calvin C. Withie, M. I. Dawson, K. J. Williams
1987 .................................................. John Kao, Frances K. Patterson, Jerry Hall
1988 .................................................. Debra L. Laskin, Sungchıl Ji, Anne M. Pilaro
1991 .................................................. Jay Babcock Silkworth, Daryl Cutler, LuAnn Antrim, Don Houston, Casimir Tumasonis, Laurence S. Kaminsky
1992 .................................................. Donald A. Fox, Steve D. Rubinstein, Pauline Hsu
1993 .................................................. Thomas Mably, Robert W. Moore, Robert W. Goy, Richard E. Peterson
1994 .................................................. Susan J. Borghoff, William H. Lagarde

Board of Publications Awards

Best Paper in Fundamental and Applied Toxicology
1995 .................................................. J. L. Larson, D. C. Wolf, B. E. Butterworth
1996 .................................................. B. C. Allen, R. J. Kavlock, C. A. Kimmel, E. M. Faustman

Best Paper in Toxicology and Applied Pharmacology
1995 .................................................. M. F. Denny, M. F. Ware, W. D. Atchison
1998 .................................................. J. S. Landin, S. D. Cohen, E. A. Khairallah

Robert L. Dixon
1989 .................................................. Kevin L. Stark
1992 .................................................. Daland Richard Juber
1995 .................................................. XueLin Li
1998 .................................................. Jeeyeon Bee

Public Communications
1994 .................................................. Michael A. Kamrin
1995 .................................................. Philip Abelson
1996 .................................................. Bruce N. Ames
1997 .................................................. Audrey Gotsch
1999 .................................................. Ann de Puyser

Graduate Student Travel Grants
Graduate Student Travel Grants are available on a one-time only basis to graduate students presenting papers or posters at the Annual Meeting. Applications are available from SOT Headquarters.
BURROUGHS WELLCOME FUND TOXICOLOGY SCHOLAR AWARD

The Burroughs Wellcome Fund offers five-year scholar awards of $400,000 to support career development in toxicology. These awards are intended to identify and encourage the development of established independent investigators whose work will advance the understanding of toxicological processes on both fundamental and physiologic levels.

The awards are open to investigators working in established toxicology programs as well as investigators in other fields who want to apply their scientific training to research issues in toxicology. The awards are intended to provide recipients with the freedom and flexibility to pursue higher-risk and innovative approaches in their research.

Candidates must be citizens or permanent residents of the United States or Canada, and research activities must take place at accredited degree-granting U.S. or Canadian institutions.

1983 .......................... Frederick P. Guengerich, R. Craig Schnell 1993 .......................... Debra Lynn Laskin, Leona Sarason
1984 .......................... Philip Guzelian 1994 .......................... Kim Boekelheide, Dennis Thiele
1986 .......................... Daniel Acosta 1996 .......................... Christopher Bradfield, Bennett Van Houten
1988 .......................... Harinara M. Mehendale
1989 .......................... Stephen H. Safe
1990 .......................... Mahin D. Maines

GRADUATE STUDENT FELLOWSHIP AWARDS

The Society of Toxicology Graduate Student Fellowship Awards are open to graduate students with at least two years of graduate study towards a Ph.D. degree in toxicology and whose major professor is a SOT member. The Education Committee’s evaluation is based primarily on originality of the dissertation research, research productivity, relevance to toxicology, scholastic achievement, and letters of recommendation. Applications are available from SOT Headquarters.

Novartis (formerly CIBA-GEIGY) Corporation Fellowships

1990 .......................... Mary Suzanne Stefaniak 1995 .......................... Heather E. Kliner
1991 .......................... Donald Bjorko 1996 .......................... Russell Thomas
1993 .......................... Christopher Martenson 1998 .......................... Kent Carlson

Covance (formerly Hazleton Laboratories) Corporation Fellowship

1984 .......................... Patricia Ganey 1989 .......................... Lorraine E. Twedt
1985 .......................... Kevin Gaido 1991 .......................... Dale Morris
1988 .......................... Caroline J. Decker 1998 .......................... Rebecca Laposa

Hoffmann-La Roche, Inc., Fellowship

1987 .......................... Andrew G. King 1993 .......................... Bevin Engelward
1990 .......................... Justin Lane Green 1996 .......................... William Salmisen
**SOCIETY OF TOXICOLOGY**

**38th Annual Meeting**

**GRADUATE STUDENT FELLOWSHIP AWARDS**

*(Continued)*

### The Procter & Gamble Company Fellowship

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>Paul W. Ferguson</td>
</tr>
<tr>
<td>1980</td>
<td>Anthony P. De Capri</td>
</tr>
<tr>
<td>1981</td>
<td>Cheng Wang</td>
</tr>
<tr>
<td>1982</td>
<td>Samson Chow</td>
</tr>
<tr>
<td>1983</td>
<td>Laurie Basting</td>
</tr>
<tr>
<td>1984</td>
<td>Philip Bartholomew</td>
</tr>
<tr>
<td>1985</td>
<td>Russell Esterline</td>
</tr>
<tr>
<td>1986</td>
<td>Leonard Saurs</td>
</tr>
<tr>
<td>1987</td>
<td>Randall Ruch</td>
</tr>
<tr>
<td>1988</td>
<td>Lawrence J. Dahn</td>
</tr>
<tr>
<td>1989</td>
<td>Christopher M. Weghorst</td>
</tr>
<tr>
<td>1990</td>
<td>Enrique Chacon</td>
</tr>
<tr>
<td>1991</td>
<td>Janice Thornton-Manning</td>
</tr>
<tr>
<td>1992</td>
<td>Melveta Archuleta</td>
</tr>
<tr>
<td>1993</td>
<td>Regina Donohoe</td>
</tr>
<tr>
<td>1994</td>
<td>Gary Miller</td>
</tr>
<tr>
<td>1995</td>
<td>Sanjay Jain</td>
</tr>
<tr>
<td>1996</td>
<td>Weston Porter</td>
</tr>
<tr>
<td>1997</td>
<td>Louise Winn</td>
</tr>
<tr>
<td>1998</td>
<td>Kristin Williamson</td>
</tr>
</tbody>
</table>

### Stauffer Chemical Company Fellowship

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>Lydia R. Cox</td>
</tr>
<tr>
<td>1988</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
</tr>
</tbody>
</table>

### Colgate-Palmolive Post-Doctoral Fellowship Award in In Vitro Toxicology

The Colgate-Palmolive Company sponsors this Post-Doctoral Fellowship Award through the SOT, directed specifically toward the study of in vitro toxicology or other alternatives to animal testing. This includes dermal, ocular, mutagenesis, molecular biology, cell culture, or metabolism. Post-doctoral trainees in their first year of study beyond the Ph.D., M.D. or D.V.M. degree who are employed by academic institutions, federal/national laboratories or research institutes worldwide may apply.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>Ernest Bloom</td>
</tr>
<tr>
<td>1989</td>
<td>Gin Hsieh</td>
</tr>
<tr>
<td>1990</td>
<td>Dennis E. Chapman</td>
</tr>
<tr>
<td>1991</td>
<td>Anne Walsh</td>
</tr>
<tr>
<td>1992</td>
<td>Qin Chen</td>
</tr>
<tr>
<td>1993</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
</tr>
</tbody>
</table>

### Colgate-Palmolive Visiting Professorship Awards

These awards emphasize in vitro toxicology and bestow up to four competing institutions visits from renowned in vitro toxicologists.

<table>
<thead>
<tr>
<th>Year</th>
<th>Institution</th>
<th>Visiting Professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>University of Mississippi Medical Center</td>
<td>Kevin E. Driscoll</td>
</tr>
<tr>
<td>1996</td>
<td>Visiting Professor: Tetsuo Sato</td>
<td>Sam Kacew</td>
</tr>
<tr>
<td>1996</td>
<td>University of Illinois at Urbana</td>
<td>University of Illinois,</td>
</tr>
<tr>
<td>1996</td>
<td>Visiting Professor: Julio Davila</td>
<td>Visiting Professor: Michael Denison</td>
</tr>
<tr>
<td>1996</td>
<td>Mississippi State University</td>
<td>University of Washington</td>
</tr>
<tr>
<td>1996</td>
<td>Visiting Professor: Michael Holappa</td>
<td>Visiting Professor: Bruce Fowler</td>
</tr>
<tr>
<td>1996</td>
<td>Washington State University</td>
<td>San Diego State University</td>
</tr>
<tr>
<td>1996</td>
<td>Visiting Professor: Daniel Acosta</td>
<td>Visiting Professor: Leigh Ann Burns Naasz</td>
</tr>
<tr>
<td>1997</td>
<td>Indiana University School of Medicine,</td>
<td>San Diego State University</td>
</tr>
<tr>
<td>1997</td>
<td>Visiting Professor: A. Jay Gandolf</td>
<td>Graduate School of Public Health</td>
</tr>
<tr>
<td>1997</td>
<td>University of Arizona Health Sciences Center</td>
<td>Visiting Professor: Robert Chapin</td>
</tr>
</tbody>
</table>

### Zeneca, Ltd. (formerly ICIC) Traveling Lectureships

The Zeneca Traveling Lectureships are presented through the SOT to recognize excellence in research and service in toxicology. Zeneca, Ltd. provides one or two awards annually to promote greater collaboration between European and North American toxicologists and to enable North American toxicologists to undertake a three- to four-week lecture tour of Europe. The awards are intended to familiarize recipients with research and regulatory issues in Europe as well as bring a North American perspective to these issues.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>Sam Kacew</td>
<td>Lucio G. Costa, Dursiela Desaih</td>
</tr>
<tr>
<td>1993</td>
<td>Terrence James Monks, Harishara H. Mehdendale</td>
<td>Alvaro Pugo</td>
</tr>
</tbody>
</table>

**SOT**
| Society of Toxicology  
| 38th Annual Meeting |

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diaz, M J</td>
<td>996, 997</td>
</tr>
<tr>
<td>Di Bartolomeis, M J</td>
<td>1601</td>
</tr>
<tr>
<td>Dickerson, R I</td>
<td>59, 60, 451, 455, 461a, 1029</td>
</tr>
<tr>
<td>Dock, T A</td>
<td>3122</td>
</tr>
<tr>
<td>Dock, L A</td>
<td>984</td>
</tr>
<tr>
<td>Degrue-Acuna, F J</td>
<td>1570</td>
</tr>
<tr>
<td>Dietl, P</td>
<td>632, 1773</td>
</tr>
<tr>
<td>Diener, W</td>
<td>1752, 1753</td>
</tr>
<tr>
<td>Ding, H</td>
<td>850</td>
</tr>
<tr>
<td>Dierer, M Z</td>
<td>22, 842</td>
</tr>
<tr>
<td>Diertt, R R</td>
<td>151, 152, 153, 154, 265, 705, 710, 1263</td>
</tr>
<tr>
<td>Di Giovanni, J</td>
<td>1639</td>
</tr>
<tr>
<td>Diliberto, J J</td>
<td>287, 1032, 1309</td>
</tr>
<tr>
<td>Diiak, L</td>
<td>107</td>
</tr>
<tr>
<td>Dillen, K B</td>
<td>1270</td>
</tr>
<tr>
<td>Dimond, S S</td>
<td>215, 216, 219, 540, 590, 1515, 1694</td>
</tr>
<tr>
<td>Dimova, S I</td>
<td>604</td>
</tr>
<tr>
<td>Ding, X</td>
<td>1899, 1900, 1901</td>
</tr>
<tr>
<td>Ding, Y</td>
<td>742</td>
</tr>
<tr>
<td>Dinerman, R B</td>
<td>156</td>
</tr>
<tr>
<td>D'Isopasca, J R</td>
<td>78</td>
</tr>
<tr>
<td>Divine, K K</td>
<td>986</td>
</tr>
<tr>
<td>Dixit, R</td>
<td>1623</td>
</tr>
<tr>
<td>Ditzon, D</td>
<td>1117</td>
</tr>
<tr>
<td>Ditzon, K</td>
<td>647, 757</td>
</tr>
<tr>
<td>Djuric, Z</td>
<td>956</td>
</tr>
<tr>
<td>Dobson, T A</td>
<td>1299</td>
</tr>
<tr>
<td>Dockery, K F</td>
<td>876</td>
</tr>
<tr>
<td>Dodd, D D</td>
<td>523, 534</td>
</tr>
<tr>
<td>Doerge, D R</td>
<td>159, 162, 224</td>
</tr>
<tr>
<td>Dog, A M</td>
<td>1235</td>
</tr>
<tr>
<td>Dog, K</td>
<td>1398</td>
</tr>
<tr>
<td>Dolan, D G</td>
<td>54</td>
</tr>
<tr>
<td>Dollarhide, J S</td>
<td>399, 525, 526</td>
</tr>
<tr>
<td>Domanski, T L</td>
<td>1932</td>
</tr>
<tr>
<td>Donceel, M A</td>
<td>530</td>
</tr>
<tr>
<td>Donaghey, T C</td>
<td>1000</td>
</tr>
<tr>
<td>Donaldson, W E</td>
<td>1541</td>
</tr>
<tr>
<td>Dong, L</td>
<td>635</td>
</tr>
<tr>
<td>Dong, W</td>
<td>27, 1217, 1486</td>
</tr>
<tr>
<td>Donnelly, J</td>
<td>1547</td>
</tr>
<tr>
<td>Donnelly, K C</td>
<td>1932</td>
</tr>
<tr>
<td>Donnelly, K</td>
<td>1547</td>
</tr>
<tr>
<td>Donnelly, K C</td>
<td>866</td>
</tr>
<tr>
<td>Donner, K D</td>
<td>724</td>
</tr>
<tr>
<td>Donner, M</td>
<td>1735</td>
</tr>
<tr>
<td>Donohoe, R M</td>
<td>1889</td>
</tr>
<tr>
<td>Donohue, J M</td>
<td>398, 1906</td>
</tr>
<tr>
<td>Donohue, S J</td>
<td>135</td>
</tr>
<tr>
<td>Dorr, T L</td>
<td>525, 526, 917</td>
</tr>
<tr>
<td>Dowd, C A</td>
<td>436</td>
</tr>
<tr>
<td>Drabushak, A T</td>
<td>456</td>
</tr>
<tr>
<td>Drake, K D</td>
<td>359</td>
</tr>
<tr>
<td>Draper, A J</td>
<td>1062</td>
</tr>
<tr>
<td>Dreher, F</td>
<td>336</td>
</tr>
<tr>
<td>Dreher, K L</td>
<td>1216</td>
</tr>
<tr>
<td>Dreisbach, A W</td>
<td>976</td>
</tr>
<tr>
<td>Dreisler, W E</td>
<td>345</td>
</tr>
<tr>
<td>Druce, D</td>
<td>1221, 1225, 1723</td>
</tr>
<tr>
<td>Driscoll, L L</td>
<td>1699</td>
</tr>
<tr>
<td>Driver, A S</td>
<td>94, 95</td>
</tr>
<tr>
<td>Driver, J H</td>
<td>724</td>
</tr>
<tr>
<td>Drummond, J G</td>
<td>275</td>
</tr>
<tr>
<td>Dryhurst, G</td>
<td>1168</td>
</tr>
<tr>
<td>Du, J T</td>
<td>491, 1606</td>
</tr>
<tr>
<td>Dun, R</td>
<td>850, 1056</td>
</tr>
<tr>
<td>Dubick, M A</td>
<td>932, 1469</td>
</tr>
<tr>
<td>Duczak, M</td>
<td>795</td>
</tr>
<tr>
<td>Dueck, H</td>
<td>779</td>
</tr>
<tr>
<td>Duchkin-Foglesp, P J</td>
<td>1742</td>
</tr>
<tr>
<td>Duffy, J Y</td>
<td>1449</td>
</tr>
<tr>
<td>Dugger, S M</td>
<td>976</td>
</tr>
<tr>
<td>Dugard, P H</td>
<td>386, 906</td>
</tr>
<tr>
<td>Duglas, T</td>
<td>906</td>
</tr>
<tr>
<td>Duggan, L J</td>
<td>1527</td>
</tr>
<tr>
<td>DuMond, J W</td>
<td>1328</td>
</tr>
<tr>
<td>Dumont, J N</td>
<td>524</td>
</tr>
<tr>
<td>Dunlap, D Y</td>
<td>1435</td>
</tr>
<tr>
<td>Dunn, B J</td>
<td>540, 1694</td>
</tr>
<tr>
<td>Dunsmuir, K</td>
<td>1850</td>
</tr>
<tr>
<td>Duran, A J</td>
<td>1809</td>
</tr>
<tr>
<td>Duran, C R</td>
<td>822</td>
</tr>
<tr>
<td>Duryan, D K</td>
<td>1211, 1215</td>
</tr>
<tr>
<td>Duruma, C G</td>
<td>685, 1071</td>
</tr>
<tr>
<td>Duran, R</td>
<td>1157</td>
</tr>
<tr>
<td>Dybdal, N</td>
<td>1201, 1209</td>
</tr>
<tr>
<td>East, W</td>
<td>595</td>
</tr>
<tr>
<td>Eastin, W C</td>
<td>1196</td>
</tr>
<tr>
<td>Eaton, D L</td>
<td>315, 1054, 1641, 1852</td>
</tr>
<tr>
<td>Ebino, K</td>
<td>1960</td>
</tr>
<tr>
<td>Eder, R</td>
<td>1777</td>
</tr>
<tr>
<td>Edler, L</td>
<td>1020, 1449</td>
</tr>
<tr>
<td>Edwards, B C</td>
<td>999</td>
</tr>
<tr>
<td>Edwards, D</td>
<td>1584</td>
</tr>
<tr>
<td>Edwards, D A</td>
<td>51</td>
</tr>
<tr>
<td>Edwards, D W</td>
<td>562, 680</td>
</tr>
<tr>
<td>Edwards, J A</td>
<td>338</td>
</tr>
<tr>
<td>Edwards, R</td>
<td>1731</td>
</tr>
<tr>
<td>Edwards, R J</td>
<td>329</td>
</tr>
<tr>
<td>Edwards, R K</td>
<td>562, 680</td>
</tr>
<tr>
<td>Ehrich, M F</td>
<td>859, 860, 862, 864, 887, 1023</td>
</tr>
<tr>
<td>Eiben, R</td>
<td>218</td>
</tr>
<tr>
<td>Eichenbaum, J W</td>
<td>1577</td>
</tr>
<tr>
<td>Eis, R B</td>
<td>865</td>
</tr>
<tr>
<td>Ekland, C R</td>
<td>473</td>
</tr>
<tr>
<td>Eslhy, J A</td>
<td>776</td>
</tr>
<tr>
<td>Eshfang, C</td>
<td>1695</td>
</tr>
<tr>
<td>Edman, M</td>
<td>1086</td>
</tr>
<tr>
<td>El-Dinny, E</td>
<td>1842</td>
</tr>
<tr>
<td>Edscheid, S R</td>
<td>1442</td>
</tr>
<tr>
<td>El-Farraw, A A</td>
<td>1331, 1058, 1073, 1936</td>
</tr>
<tr>
<td>El-Fawal, H A</td>
<td>949</td>
</tr>
<tr>
<td>Ellis, J A</td>
<td>1117</td>
</tr>
<tr>
<td>Ellis, K</td>
<td>275</td>
</tr>
<tr>
<td>Ellis, M K</td>
<td>886</td>
</tr>
<tr>
<td>Elmagban, N M</td>
<td>81</td>
</tr>
<tr>
<td>Elmagban, N O</td>
<td>81</td>
</tr>
<tr>
<td>El-Masri, H A</td>
<td>385</td>
</tr>
<tr>
<td>El-Mansy, T</td>
<td>1025</td>
</tr>
<tr>
<td>El-Masri, M</td>
<td>1222</td>
</tr>
<tr>
<td>El-Sawaby, F A</td>
<td>101</td>
</tr>
<tr>
<td>Elssasser, H T</td>
<td>240</td>
</tr>
<tr>
<td>Elsayed, N M</td>
<td>610</td>
</tr>
<tr>
<td>Elton, S E</td>
<td>461, 1116</td>
</tr>
<tr>
<td>Ema, M</td>
<td>860</td>
</tr>
<tr>
<td>Emberly, M</td>
<td>746</td>
</tr>
<tr>
<td>Emminger, S</td>
<td>476</td>
</tr>
<tr>
<td>Emond, C</td>
<td>656</td>
</tr>
<tr>
<td>Enan, E</td>
<td>630</td>
</tr>
<tr>
<td>Enan, E E</td>
<td>101</td>
</tr>
<tr>
<td>Endo, T</td>
<td>1686</td>
</tr>
<tr>
<td>English, J C</td>
<td>122</td>
</tr>
<tr>
<td>Ensminger, E</td>
<td>157</td>
</tr>
<tr>
<td>Ensminger, E F N</td>
<td>256</td>
</tr>
<tr>
<td>Ensink, K</td>
<td>1521</td>
</tr>
<tr>
<td>Epel, D</td>
<td>150</td>
</tr>
<tr>
<td>Eppel, D</td>
<td>1397</td>
</tr>
<tr>
<td>Eppeley, R M</td>
<td>159</td>
</tr>
<tr>
<td>Ertel, B</td>
<td>1488</td>
</tr>
<tr>
<td>Estebar, C</td>
<td>931</td>
</tr>
<tr>
<td>Eubert, M</td>
<td>1186</td>
</tr>
<tr>
<td>Espindar, P</td>
<td>1857</td>
</tr>
<tr>
<td>Espejo, J E</td>
<td>918</td>
</tr>
<tr>
<td>Etheridge, A E</td>
<td>1316</td>
</tr>
<tr>
<td>Etheridge, A S</td>
<td>429</td>
</tr>
<tr>
<td>Everett, R A</td>
<td>357, 1522, 1523</td>
</tr>
<tr>
<td>Eskady, J</td>
<td>931</td>
</tr>
<tr>
<td>Esfahami, N A</td>
<td>150</td>
</tr>
<tr>
<td>Evans, M V</td>
<td>662, 665, 669, 670, 1372</td>
</tr>
<tr>
<td>Evans, M G</td>
<td>1587</td>
</tr>
<tr>
<td>Everard, N E</td>
<td>1318</td>
</tr>
<tr>
<td>Everhart, J L</td>
<td>1615</td>
</tr>
<tr>
<td>Ewing, J</td>
<td>495</td>
</tr>
<tr>
<td>Eyl, V</td>
<td>1127</td>
</tr>
<tr>
<td>Fabel, L J</td>
<td>505, 509, 829</td>
</tr>
<tr>
<td>Faehl, J</td>
<td>279</td>
</tr>
<tr>
<td>Fahey McGrath, I</td>
<td>1877</td>
</tr>
<tr>
<td>Fahl, W</td>
<td>789</td>
</tr>
<tr>
<td>Fakhrizadeh, L</td>
<td>941</td>
</tr>
<tr>
<td>Falahatpisheh, M</td>
<td>123</td>
</tr>
<tr>
<td>Falany, C N</td>
<td>586, 1038</td>
</tr>
<tr>
<td>Fan, A M</td>
<td>1601, 1604, 1892</td>
</tr>
<tr>
<td>Fan, R H</td>
<td>1096, 1280</td>
</tr>
<tr>
<td>Fan, R</td>
<td>849</td>
</tr>
<tr>
<td>Fang, H</td>
<td>1893</td>
</tr>
<tr>
<td>Fang, K</td>
<td>1220</td>
</tr>
<tr>
<td>Faqi, A S</td>
<td>998</td>
</tr>
<tr>
<td>Farber, J L</td>
<td>766</td>
</tr>
<tr>
<td>Farbengel, C</td>
<td>787</td>
</tr>
<tr>
<td>Farsis, F M</td>
<td>473</td>
</tr>
<tr>
<td>Farsis, M W</td>
<td>1739</td>
</tr>
<tr>
<td>Fontaine, S M</td>
<td>1921</td>
</tr>
<tr>
<td>Forester, P D</td>
<td>349, 350, 1511</td>
</tr>
<tr>
<td>Ford, R A</td>
<td>341, 1519</td>
</tr>
<tr>
<td>Forbott, J</td>
<td>40</td>
</tr>
<tr>
<td>Forman, H J</td>
<td>1947</td>
</tr>
<tr>
<td>Forrest, T</td>
<td>454</td>
</tr>
<tr>
<td>Forsberg, L</td>
<td>1850</td>
</tr>
<tr>
<td>Forsythe, A C</td>
<td>1376</td>
</tr>
<tr>
<td>Foster, J S</td>
<td>411</td>
</tr>
<tr>
<td>Forster, R</td>
<td>464, 1580</td>
</tr>
<tr>
<td>Fortey, C S</td>
<td>375</td>
</tr>
<tr>
<td>Fort, D J</td>
<td>203, 204</td>
</tr>
<tr>
<td>Furst, F L</td>
<td>1093</td>
</tr>
</tbody>
</table>
SOCIETY OF TOXICOLOGY
MEMBERSHIP APPLICATION

PLEASE READ CAREFULLY BEFORE COMPLETING ANY PORTION OF THIS APPLICATION.

General Membership Benefits

- Discounted registration fees to the largest toxicology meeting in the world.
- Opportunities to present your original research and sponsor that of others.
- A copy of The Toxicologist—a compilation of abstracts presented at the Annual Meeting.
- Opportunities to promote knowledge in the field of toxicology and to network with other toxicologists dedicated to the improvement of the health and safety of living beings and the protection of their environment.
- Subscription to the journal Toxicological Sciences and a discount on a subscription to Toxicology & Applied Pharmacology.
- Five issues of SOT's newsletter, Communiqué.
- SOT's Membership Directory — soon to be available on-line on SOT's home page.
- Affordable health, life and disability insurance plans.
- Legislative updates and advocacy on behalf of toxicology and 4,500+ members.
- Fax-on-Demand — information 24 hours a day, 7 days a week.
- Specialty Section membership opportunities.
- Committee opportunities.
- Award eligibility.

Deadlines

There are three deadlines for application: January 1, May 1, and September 1. Completed application packets received by the January 1 deadline will be reviewed by the Membership Committee in February; completed packets received by the May 1 deadline will be reviewed by the Membership Committee in June; completed packets received by the September 1 deadline will be reviewed by the Membership Committee in October.

In April (for January 1 applications), August (for May 1 applications), and December (for September 1 applications), a list of pending member names will be sent to the voting membership of the Society of Toxicology for comments.

In May (for January 1 applicants), in September (for May 1 applicants), and in January (for September 1 applicants), Council will review the recommendations from the Membership Committee.

Candidates will be notified of their acceptance in June (for January 1 applications), in October (for May 1 applications), and in February (for September 1 applications).

Each applicant must be a qualified person with a professional, scientific interest in toxicology, in addition to meeting the requirements for the specific category of membership.

To assist the applicant in determining eligibility for membership, the Council of the Society of Toxicology has developed the following definitions and criteria for admission. The SCT Membership Committee is charged with the responsibility of evaluating each application according to these criteria.

FULL MEMBERSHIP

An individual may qualify for Full SOT Membership in two ways:

A. Based on record of peer-reviewed publications.

- At least three years of post-graduate experience prior to date of membership consideration.
- At least two peer-reviewed toxicology-related publications that are not the result of graduate research experience.
- Sponsorship by two Full Members of SOT. Sponsors must complete and sign sponsorship forms (forms provided). Full Member Applicants — no two sponsors may be from the same institution. Sponsors must be Full Members of the Society and may not be a member of the SOT Council or Membership Committee. Letters of support should be forwarded directly from the sponsor to the attention of the Membership Committee at SOT Headquarters.
- Examples of unacceptable publications include, but may not be limited to, abstracts, letters to the editor, commentaries, technical notes, book chapters, and review articles.
- Do not submit manuscripts in preparation. If manuscripts are in press, but not yet in print, indicate this and submit a copy of the letter of acceptance.
- The applicant must also submit a complete bibliography (including thesis and dissertation titles). It is essential that exact bibliographic citations be given (title, authors, journal name and volume, inclusive page numbers, and year of publication).

B. Based on documented professional experience in toxicology.

- Five years of professional experience in toxicology.
- Documentation of activities and accomplishments as a professional toxicologist.
- Sponsorship by three Full Members of SOT. Sponsors must submit completed, signed sponsorship forms (forms provided). Letters of support should be forwarded directly from the sponsor to the attention of the Membership Committee at SOT Headquarters. Full Member Applicants must be from the same institution. Sponsors must be Full Members of the Society and may not be a member of the SOT Council or Membership Committee.
B. Based on documented professional experience in toxicology (continued)

- Years of experience for consideration as a Full Member include formal post-doctoral training, but not full-time enrollment in graduate education.
- Applicants must clearly document activities and accomplishments supportive of the application such as:
  - Relevant professional experience.
  - Appointment to expert toxicology committees.
  - Awards for scientific endeavor.
  - Certification in toxicology.
  - Invited participation in toxicology meetings, seminars, symposia, and workshops.
  - Contributions to toxicology literature, such as review articles, monographs, and textbook chapters demonstrating a scholarly and/or innovative approach by the applicant.

Full Member Benefits

- Voting privileges:
  - At the Annual Meeting and at any special meeting.
  - By mail for election of Officers of the Society.
  - By mail on other matters.
- Ability to sponsor non-member colleague abstracts at the Annual Meeting.
- Officer eligibility.
- Elective Committee eligibility.
- Unrestricted eligibility to participate on SOT's appointed committees.
- Recognition among your peers.
- Eligibility for many of SOT's distinguished awards.

ASSOCIATE MEMBERSHIP

- Must have demonstrated professional, scientific activities in toxicology. Evidence of such activities may include:
  - Attendance at toxicology scientific meetings.
  - Employment responsibilities that require an understanding of toxicologic principles.
  - A beginning career in toxicologic research.
- All items of the application must be completed, in full, with special emphasis on evidence of continuing professional activities in toxicology.
- Sponsorship by two Full Members of SOT. Sponsors must submit completed, signed sponsorship forms (forms provided). Letters of support should be forwarded directly from the sponsor to the attention of the Membership Committee at SOT Headquarters. Sponsors must be Full Members and may not be members of the SOT Council or Membership Committee.

Associate Member Benefits

- Ability to sponsor non-member colleague abstract at the Annual Meeting.
- Recognition among your peers.
- Eligibility for many of SOT's distinguished awards.
- Eligibility for participation on many of SOT's appointed committees.

STUDENT/POSTDOCTORAL FELLOW MEMBERSHIP

- Must be enrolled full-time in a graduate degree program, post-doctoral fellowship, or be within a 12-month period following completion of the degree program or fellowship.
- Two Full Members must provide completed, signed sponsorship forms (forms provided). Letters of support should be forwarded directly from the sponsor to the attention of the Membership Committee at SOT Headquarters. Sponsors must be Full Members and may not be members of the SOT Council or Membership Committee.
- The applicant's faculty advisor/post-doctoral mentor must provide assurance that the applicant is a full-time student/fellow (or has completed the degree program or fellowship within the past 12 months). If the faculty advisor/mentor is a Full Member, the advisor can serve as one of the two required sponsors.
- A third sponsor who is a Full Member of SOT is required as sponsor if the advisor/mentor is not a Full Member of SOT or if the advisor is a member of the SOT Council or the SOT Membership Committee.

Student Member Benefits

- Ability to submit an unsponsored abstract at the Annual Meeting.
- Recognition among your peers.

Applicants: Make Sure You...

☐ Sign and date your application.
☐ Submit 1 copy of your completed application and resume or C.V.
☐ Confirm that your sponsors are Full Members of SOT and they are not members of the SOT Council or Membership Committee.
☐ Arrange for sponsors to complete, sign, and mail the sponsorship form by the deadline.
☐ Confirm that two of your sponsors are not from the same institution (Full Applicants only).
Society of Toxicology

Application for Membership

1) Application for the following membership category (mark only one):
   - Full (based on publication record)
   - Full (based on professional experience)
   - Associate
   - Student/Postdoctoral Fellow Member
   - Associate Member
   - Non-member

2) Applicant presently a:
   - Student/Postdoctoral Fellow Member
   - Associate Member
   - Non-member

3) Full Member Applicants, would you accept Associate Membership if that is the
determination of the Membership Committee?
   - Yes
   - No

4) Full Name: ________________ ________________

5) Membership Identification No. (first 3 and last 4 digits of your social security no. or any
   7 digits of your choice):

6) Organization:

   Department:

   Address:

   City: ____________________________
   State: ____________
   Zip: ________
   Country:

   Telephone: (________) _________
   Fax: (________)
   E-mail: ________________________

College or University | Degree(s)/Major | Date Awarded/Expected | Faculty Advisor(s)
---------------------|-----------------|-----------------------|---------------------

7) Education (Include undergraduate, graduate, and post-graduate institutions):

8) Area of specialization:

9) Area of expertise:

10) Board certification or other professional accreditation:

11) Experience: Attach a recently updated copy of your resume or curriculum vitae.
    This document should specifically include:
    - Employment history (including post-doctoral training, as applicable);
    - Description of current and previous job responsibilities related to toxicology;
    - Complete bibliography; and
    - Evidence of participation and continued interest in professional activities related to toxicology.

12) Sponsorship (see sponsorship form): Applicants must arrange for sponsorship forms to be com-
    pleted by Full Members of SOT (sponsors may not be members of SOT Council or SOT Membership
    Committee). Two sponsors are required for all applications; three sponsors are required for appli-
    cants requesting consideration as a Full Member based on professional experience. Student appli-
    cants - one sponsor must be the major advisor or postdoctoral mentor; if the advisor/mentor is not a
    Full Member of SOT or if the advisor/mentor is a member of the SOT Council or the SOT Membership
    Committee, two additional sponsors are required. Full applicants - sponsors must be from different
    organizations. Sponsorship forms should be sent directly to the SOT Headquarters address shown
    below. Candidate sponsored by (list all sponsors):

13) The Code of Ethics printed on the reverse was adopted and is subscribed to by the Membership
    of the Society of Toxicology. By signing below you agree to accept and abide by this code of ethics.
    Only signed applications will be processed.

Signature of Applicant

Date
SOCIETY OF TOXICOLOGY
SPONSORSHIP FORM #1
FOR MEMBERSHIP APPLICATION

NOTE: Sponsors must be Full Members of SOT and may not be members of the SOT Council or SOT Membership Committee.

Name of Sponsor: ________________________________
(Must be an SOT Full member)

Sponsor's Title: ________________________________

Academic/Organizational Affiliation: ________________________________

To be completed by sponsor:

• Relationship of sponsor to applicant:
  • Advisor/Mentor  • Colleague/Co-worker  • Other ____________________________

• How long has sponsor known applicant? ____________________________ years

• Applicant has or will contribute to the discipline of Toxicology as a:
  • Researcher  • Teacher  • Consultant  • Corporate Toxicologist/Study Director  • Administrator/Manager  • Other ____________________________  (check all that apply)

• If applying for membership as a Student/Postdoctoral Fellow, is the candidate enrolled as a full-time student or working full-time as a postdoctoral trainee (or within the first 12 months after completion of graduate/post-doctoral training)?
  • Yes  • No

• For Student/Postdoctoral Fellow Applicants, is sponsor the primary advisor/mentor for applicant?  • Yes  • No
  If so, is advisor/mentor a Full Member of SOT?  • Yes  • No

Comments:
(The Membership Committee requires, and considers seriously, additional informative statements supporting the applicant's candidacy for membership in the Society of Toxicology—e.g., evidence of sponsor's substantive knowledge of the candidate, candidate's familiarity with toxicology, and sponsor's statement regarding candidate's personal integrity and conformance to high ethical standards of conduct as a scientist.)

I recommend acceptance of this candidate for  ■ Full □ Associate □ Student/Postdoctoral Fellow Membership in the SOT.

Signature of sponsor ____________________________ Date __________

When completed, mail to: Membership Committee, Society of Toxicology, 1767 Business Center Drive, Suite 302, Reston, VA 20190-5332. Forms must be received by January 1, May 1, or September 1, as appropriate, of the year in which application is made. Failure to submit sponsorship forms as required will delay consideration of applications.
SOCIETY OF TOXICOLOGY
SPONSORSHIP FORM #2
FOR MEMBERSHIP APPLICATION

Name of Sponsor: ___________________________
(Must be an SOT Full member)
Sponsor's Title: _____________________________
Academic/Organizational Affiliation: ____________________________

To be completed by sponsor:

• Relationship of sponsor to applicant:
  □ Advisor/Mentor    □ Colleague/Co-worker    □ Other ______________________

• How long has sponsor known applicant? ________________________ years

• Applicant has or will contribute to the discipline of Toxicology as a:
  □ Researcher    □ Teacher    □ Consultant    □ Corporate Toxicologist/Study Director
  □ Administrator/Manager    □ Other ________________________ (check all that apply)

• If applying for membership as a Student/Postdoctoral Fellow, is the candidate enrolled as a full-time student or working full-time as a postdoctoral trainee (or within the first 12 months after completion of graduate/post-doctoral training)?
  □ Yes    □ No

• For Student/Postdoctoral Fellow Applicants, is sponsor the primary advisor/mentor for applicant? □ Yes □ No
  If so, is advisor/mentor a Full Member of SOT? □ Yes □ No

Comments:
(The Membership Committee requires, and considers seriously, additional informative statements supporting the applicant's candidacy for membership in the Society of Toxicology—e.g., evidence of sponsor's substantive knowledge of the candidate, candidate's familiarity with toxicology, and sponsor's statement regarding candidate's personal integrity and conformance to high ethical standards of conduct as a scientist.)

I recommend acceptance of this candidate for □ Full □ Associate □ Student/Postdoctoral Fellow Membership in the SOT.

Signature of sponsor ___________________________ Date ________________

When completed, mail to: Membership Committee, Society of Toxicology, 1767 Business Center Drive, Suite 302, Reston, VA 20190-5332. Forms must be received by January 1, May 1, or September 1, as appropriate, of the year in which application is made. Failure to submit sponsorship forms as required will delay consideration of applications.
SOCIETY OF TOXICOLOGY
SPONSORSHIP FORM #3
FOR MEMBERSHIP APPLICATION

Name of Sponsor: ________________________________
(Must be an SOT Full member)

Sponsor's Title: ________________________________

Academic/Organizational Affiliation: ________________________________

To be completed by sponsor:

- Relationship of sponsor to applicant:
  - Advisor/Mentor  □ Colleague/Co-worker  □ Other __________________________

- How long has sponsor known applicant? ________________ years

- Applicant has or will contribute to the discipline of Toxicology as a:
  - Researcher  □ Teacher  □ Consultant  □ Corporate Toxicologist/Study Director
  - Administrator/Manager  □ Other __________________________ (check all that apply)

- If applying for membership as a Student/Postdoctoral Fellow, is the candidate enrolled as a full-time student or working full-time as a postdoctoral trainee (or within the first 12 months after completion of graduate/post-doctoral training)?
  - Yes  □ No

- For Student/Postdoctoral Fellow Applicants, is sponsor the primary advisor/mentor for applicant? □ Yes □ No
  - If so, is advisor/mentor a Full Member of SOT? □ Yes □ No

Comments:
(The Membership Committee requires, and considers seriously, additional informative statements supporting the applicant's candidacy for membership in the Society of Toxicology—e.g., evidence of sponsor's substantive knowledge of the candidate, candidate's familiarity with toxicology, and sponsor's statement regarding candidate's personal integrity and conformance to high ethical standards of conduct as a scientist.)

I recommend acceptance of this candidate for □ Full □ Associate □ Student/Postdoctoral Fellow Membership in the SOT.

Signature of sponsor ____________________________ Date ____________________________

When completed, mail to: Membership Committee, Society of Toxicology, 1767 Business Center Drive, Suite 302, Reston, VA 20190-5332. Forms must be received by January 1, May 1, or September 1, as appropriate, of the year in which application is made. Failure to submit sponsorship forms as required will delay consideration of applications.
TOXICOLOGICAL SCIENCES

Dr. Curtis Klaassen, Editor
University of Kansas Medical Center,
Department of Pharmacology, Toxicology & Therapeutics

Oxford University Press now publishes Toxicological Sciences, an official journal of the Society of Toxicology. Toxicological Sciences publishes research articles that are relevant to assessing the potential adverse health effects resulting from exposure of humans or animals to chemicals, drugs, natural products, or synthetic materials. Join your peers in subscribing to one of the most important toxicology journals and receive 12 issues per year. Or, become a member of the Society and receive the journal as part of membership.

Manuscripts are published in all areas of toxicology, both descriptive and mechanistic, as well as interpretative or theoretical investigations that elucidate the risk assessment implications of exposure to toxic agents alone or in combination. Studies may involve experimental animals or human subjects, or they may focus on in vitro methods or alternatives to the use of experimental animals.

Stop by booth #448 in Publisher’s Row. SOT Attendees receive 15% discount on all new individual journal subscriptions!

Visit booth #448 in Publisher’s Row to receive sample copies. Or, fill out the form below, drop it off, and you will be mailed a sample.

Yes! I am interested in subscribing to:

Please send me a free sample copy

Name
Affiliation
Address
City State Zip

SOT392

OFFICIAL JOURNAL OF THE
SOCIETY OF TOXICOLOGY
www.academicpress.com/sot

Toxicology and Applied Pharmacology

Editor
Edward Bresnick
University of Massachusetts Medical Center, Worcester

Toxicology and Applied Pharmacology publishes original scientific research pertaining to action on tissue structure or function resulting from administration of chemicals, drugs, or natural products to animals or humans. Articles address mechanistic approaches to physiological, biochemical, cellular, or molecular understanding of toxicologic/pathologic lesions and to methods used to describe these responses. Papers concerned with alternatives to the use of experimental animals are encouraged. Short reviews on timely subjects, communications, announcements, and letters to the editor are also featured.

Database coverage includes Biological Sciences (BIOSIS), Chemical Abstracts, Current Contents/Life Sciences, Excerpta Medica (EMBASE), Index Medicus (MEDLINDEX), and Science Citation Index.

Volumes 154-161 (1994), 24 issues (including chemical and subject indexes)

ANNUAL

SUBSCRIPTION RATES

In the U.S. and Canada: $75.00
All other countries: $72.00

ISSN 0041-008X

FREE SAMPLES ARE AVAILABLE ONLINE!
www.idealibrary.com

ACADEMIC PRESS
Marketing Department
625 B Street, Suite 1900
San Diego, CA 92101-4495, U.S.A.
(800) 894-3345 • (619) 699-6742
e-mail: apaubs@acap.com

ACADEMIC PRESS, LTD.
Marketing Department
24-28 Oval Road
London, NW1 7DX, U.K.
In Europe call: +44(0) 181 588 5700

All prices are in U.S. dollars and are subject to change without notice. U.S. customers: Please add state sales tax to your order. Canadian customers: Please add 7% Goods and Services Tax to your order. Non-academic subscription rates are available only on orders placed directly with the Publisher and paid for with personal funds. Payments directed to the U.S. must be in U.S. currency, by U.S. Bank Draft, for International Money Order, or in UNESCO coupons. PAH/V/88-1983# 1990