Scientific, Regulatory, and Public Perspectives on the Credibility and Use of Alternative Toxicological Test Methods in a Legislative Framework

Introduction

The role of toxicology and toxicity testing in legislation and regulatory decision-making continues to change and an understanding of the opportunities, as well as challenges, that accompany the consideration of alternative test methods in a legislative framework is critical for forward progress in public health protection.

Issues

Primary research advances in toxicology and toxicity testing significantly outpace the rate at which they can be incorporated into the legislative process and regulatory decision-making framework. One of the hurdles for incorporating new approaches, technologies, and tools in toxicology into the legislative and regulatory framework is a consensus that the replacements have the suitable precision, accuracy, and scientific rigor. In order to be successful, this consensus needs to include not only scientific and regulatory communities, but also the general public, which in recent years has become more interested, educated, and vocal on the subject. Advances in toxicology and toxicity testing are critical to the modernization of chemical legislation and regulations and the advancement of the protection of public and environmental health. However, this laudable goal must be tempered by caution to not prematurely force science into the legislative and regulatory framework as the consequences of this can be significant and enduring.

New tools and technologies that are used to assess the hazard potential of chemicals continue to be developed and advanced. This is promising, as there is a general consensus within the scientific, and particularly toxicological, community that reduction, refinement, and replacement of animals in research continues to be a priority. But, there is also a healthy discussion and debate as to whether new tools and technologies used to probe the hazard, and ultimately risk, potential of chemicals are suitable at present to replace whole animal testing. The utility, accuracy, and predictability of these new tools will continue to be a sentinel question going forward.

Additional Sources of Information:


The Hamner Institutes for Health Sciences: www.thehamner.org