

Implementation of the Strategic Roadmap: Alternatives for Toxicity Testing, including Skin Sensitization and Acute Systemic Toxicity

Presenters:

- Introduction: Nicole Kleinstreuer, Ph.D., NIEHS/DNTP/NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM)
- Skin Sensitization: Dr. Joanna Mattison, Consumer Product Safety Commission
- Acute Systemic Toxicity: Dr. Kleinstreuer

Since its inception, the U.S. Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) has been dedicated to the 3Rs: replacing, reducing, and refining the use of animals for toxicity testing. In concert with its coordination of the Strategic Roadmap to Establish New Approaches for Toxicity Testing in the United States, ICCVAM and NICEATM are developing implementation plans to prioritize the execution of activities to support the development, evaluation, and regulatory use of alternative approaches for each of the “6-pack” of acute toxicity studies. The “6-pack” tests include acute systemic toxicity for (1) oral, (2) dermal, and (3) inhalation routes of exposure; (4) skin corrosion and irritation; (5) eye corrosion and irritation; and (6) skin sensitization. The roadmap implementation plans will establish new approaches for evaluating the toxicity of chemicals and medical products in the United States that will improve human relevance, increase confidence, and reduce costs. These implementation plans will provide the strategy for the reduction and replacement of animal use for toxicity testing in six key endeavors:

1. Coordinating activities via ICCVAM Working Groups
2. Drafting a scoping document to identify U.S. agency requirements and needs for each endpoint
3. Coordinating efforts with stakeholders
4. Identifying, acquiring, and curating high quality data from reference test methods as well as potential non-animal alternatives
5. Identifying and evaluating non-animal alternative approaches
6. Gaining regulatory acceptance and use of non-animal approaches

Skin Sensitization

NICEATM website for Immunotoxicity: Allergic Contact Dermatitis:

<https://ntp.niehs.nih.gov/pubhealth/evalatm/test-method-evaluations/index.html> and
<https://ntp.niehs.nih.gov/pubhealth/evalatm/test-method-evaluations/immunotoxicity/index.html>

Poster: Prediction of Skin Sensitization Potency Using Machine Learning Approaches, ASCCT 2016.

<https://ntp.niehs.nih.gov/iccvam/meetings/ascct-2016/strickland-sspotencyiata-poster.pdf> and
<https://ntp.niehs.nih.gov/iccvam/meetings/ascct-2016/strickland-sspotencyiata-postertext-508.pdf>

Acute Systemic Toxicity

NICEATM website: <https://ntp.niehs.nih.gov/pubhealth/evalatm/test-method-evaluations/index.html>
and <https://ntp.niehs.nih.gov/pubhealth/evalatm/test-method-evaluations/acute-systemic-tox/index.html>

Poster: Replacing Animals for Acute Systemic Toxicity Testing: A U.S. Strategy and Roadmap. SOT 2017.
<https://ntp.niehs.nih.gov/iccvam/meetings/sot17/lowit-508.pdf>