Tox21 Strategic Plan

Presenter: Dr. Russell Thomas, EPA

The Tox21 collaboration was formalized in 2008 through a memorandum of understanding (MOU) between the National Institutes of Health, including the National Toxicology Program (NTP) and National Human Genome Research Institute's National Chemical Genomics Center (NCGC, now a part of NCATS), and the EPA's National Center for Computational Toxicology. The Food and Drug Administration (FDA) joined the Tox21 collaboration in 2010. The primary goal of the Tox21 collaboration is focused on developing new tools and methods that more efficiently and reliably predict whether a chemical might be toxic to humans. Further development and usage of these approaches will continue to significantly reduce the use of animals for chemical testing and provide data to better protect public health. Research activities under the new Tox21 strategic vision and operational plan will be focused on the following areas:

1. Developing and deploying alternative test systems that are predictive of human toxicity and dose response.

2. Addressing key technical limitations of current high-throughput screening systems.

3. Consolidating chemical library management and developing more focused libraries.

4. Curating and characterizing legacy animal toxicity studies for continued comparison to high-throughput screening results.

5. Validating high-throughput assays, integrated assay batteries, computational models, 3-D organ-like model systems, and other emerging Tox21 approaches.

6. Refining and deploying high-throughput methods for characterizing pharmacokinetics to better predict the relationship between target tissue concentrations and external doses of chemicals.

More information available at: https://www.epa.gov/sites/production/files/2017-08/documents/tox21_fact_sheet_v7.pdf