

Identifying Toxicity Pathways with ToxCast High-Throughput Screening and Applications to Predicting Developmental Toxicity

David J. Dix

National Center for Computational Toxicology, Office of Research and Development, U.S. Environmental Protection Agency

Results from rodent and non-rodent prenatal developmental toxicity tests for over 300 chemicals have been curated into the relational database ToxRefDB. These same chemicals have been run in concentration-response format through over 500 high-throughput screening assays assessing various molecular and cellular endpoints. This combination of in vivo and in vitro data from the ToxCast™ research program has been used to develop predictive models of toxicity pathway response and adverse developmental outcomes. This presentation will present key toxicity pathways impacted by in vitro chemical exposures that represent plausible modes of action for developmental defects observed in vivo.

[This work has been reviewed by EPA and approved for publication but does not necessarily reflect official Agency policy].