

Development of a Curated Database of *In Vivo* Estrogenic Activity

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Currently mandated testing for potential estrogenic activity will involve thousands of chemicals, cost millions of dollars, and take decades to complete using current validated tests. High throughput screening and computational toxicology tools may streamline this process by the quick and cost-effective identification of endocrine active chemicals (EACs). Access to a comprehensive database of high-quality *in vivo* EAC toxicology data is critical for the validation of *in silico* models and *in vitro* assays. The database can be used to prioritize chemicals for screening. Validation of HTS assays using the database will enable replacement of current validated *in vitro* screening assays with validated HTS assays. The results of these tests will better inform and target *in vivo* screening assays. To create such a database, we reviewed the current scientific literature, identified high-quality *in vivo* endocrine disruption testing data, and compiled the data into a single database. Initial review focused on the estrogenic effects of 52 reference chemicals selected by the EPA and NTP. Studies including data for these 52 chemicals on a number of different estrogenic endpoints (i.e., uterotrophic, pubertal, multigenerational, etc.) were identified. Data from the studies were extracted and compiled using a standardized ontology. An R script was developed to evaluate the quality of the data according to modified Klimisch criteria in an efficient and standardized manner. Data that were classified as reliable were added to the database, which is available on the NTP website (<http://ntp.niehs.nih.gov/go/40658>). This database constitutes a critical resource for validating *in vitro* and *in silico* models of estrogenic activity.

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