Characteristics of the ToxRefDB *In Vivo* Datasets from Chronic, Reproductive and Developmental Assays

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ToxRefDB was developed to store data from in vivo animal toxicity studies. The initial focus was populating ToxRefDB with pesticide registration toxicity data that has been historically stored as hard-copy and scanned documents by the Office of Pesticide Programs. A significant portion of these data have now been processed into ToxRefDB in a standardized and structured format. ToxRefDB currently includes chronic, cancer, sub-chronic, developmental, and reproductive studies on over 400 chemicals, many of which are pesticide active ingredients. These data are now computable within ToxRefDB, and are serving as reference toxicity data for the development ToxCast™ predictive signatures. The three primary datasets currently being used for predictive modeling are publically available and span chronic, reproductive and developmental endpoints. The rat and mouse chronic data primarily focuses on pathological endpoints related to progression and formation of tumors. The reproductive data is culled from rat multigeneration studies and focuses on reproductive performance measures, reproductive organ pathologies, and offspring survival decrements. The developmental endpoints are culled from data in rat and rabbit prenatal studies for which detailed anatomical information is collected on observed malformations. These endpoints were subsequently mapped to the developing system. For each study type, greater than 200 of the 309 chemicals in ToxCast have high quality data and roughly 200 chemicals have near complete dataset across all three major study types. *This work was reviewed by EPA and approved for publication but does not necessarily reflect official Agency policy.*