

Characteristics and Applications 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 of ToxCast™ predictive signatures as well as for retrospective analyses assessing past performance of guideline toxicity studies and informing on potential changes to current guidelines. The three primary datasets currently being used for predictive modeling have been published and include 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 from rat multi-generation studies and focuses on reproductive performance measures, reproductive organ pathologies, and offspring survival decrements. The developmental endpoints are from rat and rabbit prenatal studies for which detailed anatomical information is collected on observed malformations which were subsequently mapped to the developing system. Thus ToxRefDB provides high quality, comparable data for over 200 of the of the 309 ToxCast™ chemicals from chronic, reproductive and developmental study types. *This work was reviewed by EPA and approved for publication but does not necessarily reflect official Agency policy.*