

- ViTAL is a comprehensive toxicity prediction platform which provides multiple levels of toxicity alerts in compliance with the requirements of regulatory authorities for product approval.
- It has robust and tested methodologies derived from the collective expertise of field toxicologists, scientific and data inputs from reputed research institutes. ViTAL is well accepted by the industry.
- ViTAL provides alerts for genotoxicity along with probability values which indicate the significance of toxicophores.
- The unique **Three Pronged Approach of ViTAL** combines reliable:
  - **Decision tree methodology:** It employs rulebase in accordance with the results of Joint Research Centre's European Chemicals Bureau's hazard estimation based on the Benigni/Bossa rulebase for genotoxic carcinogenicity and mutagenicity (Benigni et .al. JRC Scientific and Technical, 2008).
  - **ANOVA methodology:** It provides the significance of the toxicophores of carcinogenicity based on F-ratio and probability
  - **SAR / QSAR models:** The models provide qualitative prediction for mutagenicity and carcinogenicity along with confidence level of prediction based on applicability domain
- Additionally ViTAL provides molecular fingerprint based similarity search in database of toxic compounds to increase confidence level of genotoxicity prediction.
- ViTAL databases include:
  - Compounds having TD50 values reported for rats and mouse species from Handbook of Carcinogenic Potency and Genotoxicity Database of Gold and Zieger.
  - Ames dataset for Mutagenicity, CPDB dataset for mutagenicity and carcinogenicity and dataset for COMET assay.
  - ViTAL allows use of customers' databases for its predictions where available.

