

AcuBase - a unique database for integration and analysis of acute toxicity data

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AcuBase is in development as a central database for coherent management of all information relevant to an EU integrated research project 'ACuteTox', aiming to optimise and pre-validate an *in vitro* testing strategy for predicting acute human toxicity of chemicals. The database comprises two principal parts, for archiving *in vitro* and *in vivo* data respectively. The *in vitro* part provides a standard format repository for cytotoxicity assays generated by project partner research laboratories. The *in vivo* part compiles mammalian acute toxicity studies derived from published literature and human blood poisoning cases available from clinical/post mortem reports. At present, 97 reference chemicals have been selected, including different generic use classes (pharmaceutical, industrial, agricultural, consumer, etc.) and complementary representation of the five GHS toxicity thresholds. AcuBase also compiles toxicokinetic/pharmacokinetic data and physical-chemical properties on the reference chemicals. In the course of the project the selected chemicals will be tested in several *in vitro* systems, including models for general acute cytotoxicity, metabolism mediated toxicity, biokinetics, neurotoxicity, nephrotoxicity, hepatotoxicity. The results from these experiments will be reported in the *in vitro* part of Acubase together with detailed descriptions of methodologies (Standard Operating Procedures). The human section of AcuBase will represent acute toxicity data, preferentially from a single poisoning, consisting of toxic doses, sub-lethal, lethal, and post-mortem blood concentrations, as well as symptoms and signs, and clinical treatment conditions. In the animal part, LD50 values and experimental observations from studies of different species treated with the same reference chemicals will be collected from available sources. At present time, AcuBase is under continuous development, and it will be available for the broad circles of toxicologists and physicians in a near future.

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