VALIDATION STUDY DESIGN TO EVALUATE *IN VITRO* CYTOTOXICITY ASSAYS FOR PREDICTING RODENT AND HUMAN ACUTE SYSTEMIC TOXICITY

Stokes, WS[1], Balls, M[2], Strickland, JA[3], Worth, A[2], Paris, MW[3], Casati, S[2], Tice, RR[3]

[1]National Toxicology Program (NTP) Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM), National Institute of Environmental Health Sciences (NIEHS), RTP, NC 27709; [2]European Centre for the Validation of Alternative Methods (ECVAM), JRC, Ispra, Italy; [3]Integrated Laboratory Systems, Inc., Durham, NC 27713

SUMMARY

The Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) and NICEATM convened an international workshop in October 2000 to evaluate the validation status of ***in vitro*** methods for predicting acute systemic toxicity. Workshop participants recommended that two ***in vitro*** cytotoxicity methods should be further evaluated to determine their usefulness for predicting rodent and human acute toxicity. The NICEATM and ECVAM subsequently designed a multi-laboratory validation study to evaluate the relevance and reproducibility of two neutral red uptake assays using one rodent cell line and one human cell type. Seventy-two coded chemicals representing twelve chemicals from each of six hazard classification categories will be tested in each of three laboratories. The study will proceed in three phases. Twelve chemicals will be tested in Phases I and II, followed by sixty chemicals in Phase III. The Register of Cytotoxicity prediction model will be used to evaluate the prediction of rodent oral LD50 tests. Prediction of human toxicity will be evaluated using a MEIC prediction model based on human poisoning data. This validation study will further characterize the usefulness and limitations of these basal cytotoxicity tests for reducing and replacing animal use for acute systemic toxicity.
Supported by NIEHS contract N01-ES-85424.

Category: Validation/Testing

CONTACT: stokes@niehs.nih.gov