

NICEATM Poster Presentation

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Reproducibility Analyses for *In Vitro* Neutral Red Uptake Methods from a Validation Study to Evaluate *In Vitro* Cytotoxicity Assays for Estimating Rodent Acute Systemic Toxicity

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In a multi-laboratory validation study, 72 coded chemicals with a wide range of toxicities were tested *in vitro* using the neutral red uptake (NRU) basal cytotoxicity assay with BALB/c mouse fibroblast cells (3T3) and normal human keratinocytes (NHK). Intra- and inter-laboratory reproducibility of the IC₅₀ for the positive control, sodium laurel sulfate (SLS), was assessed over the 2.5-year study using ANOVA and regression. Interlaboratory reproducibility of the test chemical results was assessed using ANOVA and coefficient of variation (CV) analysis and by comparison of lab-specific IC₅₀-rat oral LD₅₀ regressions. The ANOVA for SLS, for both cell types, showed significant differences within and among the labs and the linear regression analysis over time yielded a very small slope. For the test chemicals, ANOVA identified lab differences for 26 chemicals in the 3T3 assay and 7 chemicals in the NHK assay. The mean intralaboratory CV was 26% for both test methods, while the mean interlaboratory CV was 46% for 3T3 and 28% for NHK cells. Lab-specific linear IC₅₀-LD₅₀ regressions for each test method were both the same. Comparison of the mean IC₅₀ values for the 58 study chemicals common to the Registry of Cytotoxicity (RC) yielded a high correlation (r=0.955 for 3T3; r=0.824 for NHK). Supported by: N01-ES-35504, N01-ES-75408; EPA IAG DW-75-93893601-0; European Commission 19416-2002-04 F2ED ISP GB.

SOT Itinerary Information:

ID# 1970
Location: Exhibit Hall (Convention Center)
Date/Time: March 8, 2006 / 1:30 – 4:30 pm
Category: Alternatives to Mammalian Models, (Risk Assessment)