ICCVAM Recommendations on the Use of Four *In Vitro* Test Methods for the Classification of Ocular Corrosives and Severe Irritants

LM Schechtman[1], M Wind[2], JC Merrill[1], KL Hamernik[3], RR Tice[4], WS Stokes[4]. [1]U.S. FDA, Washington, DC, [2]U.S. CPSC, Bethesda, MD, [3]U.S. EPA, Washington, DC, [4]NICEATM, NIEHS/NIH/DHHS, RTP, NC.

Animal welfare concerns about the Draize rabbit eye test have led to the development of numerous proposed alternative *in vitro* test methods. ICCVAM recently completed an evaluation on the validation status of and published recommendations for four of these methods for identifying ocular corrosives and severe irritants: IRE, ICE, BCOP, and HET-CAM. *In vivo* results were classified based on regulatory eye hazard classification systems and *in vitro* results were classified based on decision criteria obtained from literature reviews or personal communications with test method developers. Accuracy statistics for each *in vitro* test method were similar across all regulatory classification systems (i.e., EPA, EU, GHS). Where data permitted, reliability analyses indicated that the methods were generally reproducible within and between laboratories. Based on the available data, ICCVAM recommends that BCOP and ICE can be used in appropriate circumstances and with certain limitations as screening tests for the detection of ocular corrosives and severe irritants in a tiered-testing scheme, using a weight-of-evidence approach. Since test method performance varied for different chemical and physical classes, ICCVAM recommends that the current database and performance be reviewed to determine the suitability of a method for specific testing situations. Consistent with U.S. Animal Welfare Regulations, ICCVAM further recommends that *in vitro* ocular test methods be considered for specific testing situations prior to testing in animals and that an alternative test method be used when appropriate. When used in this manner, these methods should reduce the pain and distress associated with testing ocular corrosives and severe irritants. The ICCVAM report also provides recommended test method protocols and substances for validation studies, and recommendations for future studies that might improve the usefulness of these test methods.
Supported by NIEHS contract N01-ES-35504.

Character (with spaces) Count: 2300/2300
Keywords: ocular irritation, regulatory classification, alternative test methods
Categories: Regulatory/Policy (2nd choice - Alternatives to Mammalian Models)