Abstract 134 — Poster Presentation: Session II-12 "Skin Sensitization"

Development of an Open-Source Integrated Testing Strategy for Skin Sensitization Potency

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Abstract

Regulatory authorities require testing to identify substances with the potential to cause allergic contact dermatitis. To reduce or eliminate animal use in testing, integrated testing strategies (ITS) that combine data from *in silico* and *in vitro* test methods have been proposed. Scientists at the National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) and Procter and Gamble (P&G) have developed an open-source version of a previously published ITS for skin sensitization (1, 2). The original ITS was developed with a Bayesian network using a commercial software package. NICEATM and P&G developed the open-source model utilizing R software for building and performing exact inference with a Bayesian network. The open-source and the commercial models had identical overall classification accuracies. Two case studies of representative substances, chlorobenzene and 2-mercaptobenzothiazole will be presented. The open-source model provides availability and transparency, and represents a major step in allowing the ITS to be reproduced and tested, which is essential for use in a regulatory framework. The model is available on the NTP website (http://ntp.niehs.nih.gov/go/its). This project was funded in whole or in part with Federal funds from the NIEHS, NIH under Contract Nos. N01-ES-35504 and GS-23F-9806H.

References:

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