COMPARATIVE PERFORMANCE OF ESTROGEN RECEPTOR (ER) BINDING AND TRANSCRIPTIONAL ACTIVATION ASSAYS FOR USE AS *IN VITRO* ENDOCRINE DISRUPTOR SCREENING METHODS

B.S. Shane[1,2], C.J. Inhof[1,2], E. Zeiger[3], R.R. Tice[1,2] , W.S. Stokes[2,4]

[1]Integrated Laboratory Systems, Durham, NC, 27713; [2]NTP Interagency Center for the Evaluation of Alternative Toxicological Methods, RTP, NC, 27709; [3]Errol Zeiger Consulting, Chapel Hill, NC, 27517; [4]NIEHS, RTP, NC, 27709

SUMMARY

Recent studies indicate that a variety of natural and anthropogenic substances can act as hormonal agonists or antagonists. The public health concern surrounding these findings prompted U.S. legislation requiring a federal regulatory screening program that identifies potential endocrine-active substances. In vitro ER binding and transcriptional activation assays have been proposed as screening methods to identify substances that may mimic or block the activity of endogenous estrogen. As a step toward identifying assays that should be given priority for further validation studies, results from published reports on substances tested in ER binding and transcriptional activation assays were compiled and compared. This poster presents a summary of the available data on ER binding and transcriptional activation assays reported in the literature, and assesses the various assays for their comparative effectiveness in identifying estrogen-active substances. Assays were prioritized for future validation studies based on their comparative performance. Major strengths and limitations of different receptor binding and transcriptional activation assays that should be considered in prioritizing assays are also presented. Performance-based prioritization of assays for further validation studies should facilitate evaluation and selection of the most promising assays for an effective screening program. Supported by NIEHS Contract N01-ES-85424.

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CONTACT: shane@niehs.nih.gov