

## CANDIDATE CHEMICALS FOR VALIDATION OF *IN VITRO* ESTROGEN AND ANDROGEN RECEPTOR BINDING AND TRANSCRIPTIONAL ACTIVATION ASSAYS

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### SUMMARY

In 1998, the U.S. Environmental Protection Agency's Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) recommended four *in vitro* tests for identifying estrogen-disrupting substances. These assays are estrogen (ER) and androgen receptor (AR) binding, and transcriptional activation of estrogen and androgen responsive genes. A comprehensive review of the literature identified more than 600 and 200 chemicals that have been tested, respectively, for ER and AR binding in numerous assays. To facilitate evaluation of the comparative usefulness of the current and future assays, a list of chemicals that should be considered for validation studies was prepared. The potency of the ER and AR binding positive substances covered seven orders of magnitude. Chemical selection criteria included the potency of the chemical, the reliability of the data, its chemical class, if the chemical is used in commerce or found in the environment, and its commercial availability. Based on these criteria, 30 ER and 30 AR positive and 5 ER and 5 AR binding negative substances were selected. The use of a standard list of chemicals in future validation studies will facilitate determination of the acceptability of *in vitro* and *in vivo* assays and test batteries for inclusion in the screening program for endocrine active substances. Supported by NIEHS Contract N01-ES-85424.

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