

Quantitative assessment of xenoestrogens by the E-SCREEN assay

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The potential of certain chemicals to modulate endocrine systems, and thereby interfere with reproduction and development in wildlife and human, is now widely recognised. *In vitro* test methods have utility for elucidating mechanism of action, and could be used in conjunction with SAR to priorities compounds for short term *in vivo* testing. Mechanistic understanding will be an important factor for identifying endocrine modulators and must be used together with knowledge on comparative endocrinology in order to extrapolate potential effects in different wildlife species.

In vitro assays are useful for detecting chemicals which act through direct, receptor mediated mechanism of action, and there is the potential to further develop systems to detect compounds acting through alternate mechanism of action. Before *in vitro* tests can be used routinely, suitable tests must be selected, they must then be optimised and validated using internationally agreed approaches.

E-SCREEN assay provided by Dr. Soto is very useful for assessing receptor mediated mechanism of endocrine disruptors and detecting the endocrine disrupting chemicals. This assay used ER-positive, estrogen-responsive MCF-BOS cells.

In order to validate E-SCREEN assay we tested 17β -estradiol(positive control as estrogenic effect), tamoxifen(positive control as antiestrogenic effect) and screened several pesticides and alkylphenols. Also we examined cumulative effects of environmental xenoestrogens by using the E-SCREEN assay.

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