

**Development and Validation of the Custom Human cDNA Microarray
(KISTCHIP-400) for Monitoring Expression of Genes involved in
Hormone Disruption**

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Transcript profiling is a particularly valuable tool in the field of steroid receptor biology, as these receptors are ligand-activated transcription factors and therefore exert their initial effects through altering gene expression in responsive cells. Also, an increased awareness of endocrine disrupting chemicals (EDCs) and their potential to affect wildlife and humans has produced a demand for practical screening methods to identify endocrine activity. Here we developed an in-house cDNA microarray, named KISTCHIP-400, with 401 clones, hormone related genes, factors, and ESTs, based on public database and research papers. These clones contained estrogen, androgen, thyroid hormone & receptors, sex hormone signal transduction & regulation, c-fos, c-myc, ps2 gene, metabolism related genes etc. And to validate the KISTCHIP-400, we investigated gene expression profiles with reference hormones, 10^{-8} M 17beta-estradiol, 10^{-7} M testosterone, 10^{-7} M progesterone, and thyroxin in MCF-7 cell line. Although it is in first step of validation, low doses and combinations of EDCs need to be tested. Our preliminary results that indicate the developed microarray may be a useful laboratory tool for screening EDCs and elucidating endocrine disrupting mechanism.