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**HUMAN BREAST CANCER CELL LINES AS MODELS FOR INVESTIGATING THE EFFECTS
OF 2,3,7,8-TCDD AND RELATED COMPOUNDS**

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ABSTRACT

The dose-response effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), 2,3,7,8-tetrachlorodibenzofuran (TCDF) and 1,2,4,7,8-pentachlorodibenzo-p-dioxin (PeCDD) as inducers of aryl hydrocarbon hydroxylase (AHH) and ethoxyresorufin O-deethylase (EROD) were determined for 3 human breast cancer cell lines. The T47-D and MCF-7 cell lines were highly responsive to the induction effects of TCDD and TCDF. EC_{50} values were approximately 1×10^{-9} M for TCDD and TCDF in both cell lines and in both enzyme assays. These results, coupled with the low activity of the PeCDD congener were consistent with an Ah receptor mediated-induction process. The MDA-MB-231 cell line was not responsive to TCDD, TCDF or PeCDD. Preliminary data demonstrated that pretreatment of MCF-7 cells with TCDD resulted in a substantial decrease in the amount of nuclear estrogen receptor bound by [3 H]-estradiol. Additional studies using estrogen receptor antibodies confirmed the reduction of the nuclear estrogen receptor protein in MCF-7 cells by TCDD.