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Changes in gene expression following long-term in vitro exposure of *Macaca mulatta* trophoblast stem cells to biologically relevant levels of endocrine disruptors

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Running Head: Endocrine disruptor effects on primate trophoblast stem cells

Highlights

- Effects of chronic exposure to low concentrations of five endocrine disrupting chemicals (EDCs) were examined in rhesus monkey trophoblast stem cells
- RNA sequencing revealed largest numbers of affected genes following tributyltin and atrazine treatment, with substantial overlap in effects between these two toxicants
- The most prominent effect for all five compounds was the suppression of pathways related to cytokine signaling and anti-viral response
- Other effects observed predominantly with tributyltin or atrazine included diminished DNA damage repair and cell movement functions, increased cell viability and proliferation functions, and disruption of metabolic processes.
- These results from an animal model closely related to humans indicate that chronic low-level exposure to EDCs could impair trophoblast stem cell function and diminish human pregnancy outcomes by compromising trophoblast invasiveness, embryo implantation and placenta defense against viral pathogens.