Analysis of epigenetic (DNA methylation) changes induced by exposure to a mixture of endocrine disrupting chemicals in mouse brain and a human cell model

Master's project

Accumulating evidence suggests that gestational exposure to endocrine disrupting chemicals (EDCs) interferes with brain development and predisposes for later dysfunctions. This project will be focused on the exposure impact of a mixture of EDCs (phthalates, pesticides and bisphenol A (mixture N1) detected in pregnant women in a Swedish mother-child cohort (the SELMA study) and associated with language delay in their children.

To understand the mechanisms underlying long-term impacts of developmental exposure to this mixture on brain physiology and behavior, the student will (1) study epigenetic (DNA methylation) changes in adult hippocampus and frontal cortex of mice exposed to the mixture during prenatal development; (2) based on these data, design and optimise assays to assess epigenetic changes in a human in vitro model for neural differentiation.

Time: at least 6 months

Where: EBC, Uppsala University

Main techniques: bisulfite conversion, PCR, pyrosequencing, DNA extraction, cell culture

Are you interested? Contact EpiTox Group at Environmental Toxicology program

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