Exposure assessment and risk characterization of pregnant women and their ongoing birth cohort to environmental endocrine disruptors (EDs)

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The general objective of this project is to determine prenatal exposure and the exposure during the first months of life through human biomonitoring tools and PBPK models.

This general objective involves the following tasks:

✓Literature review on EDs: Physicochemical properties of the most widespread distributed in our society such as Bisphenol A (BPA) and Bis (2-ethylhexyl) phthalate (DEHP), environmental levels, concentration levels in biological matrices and in food and consumer products.

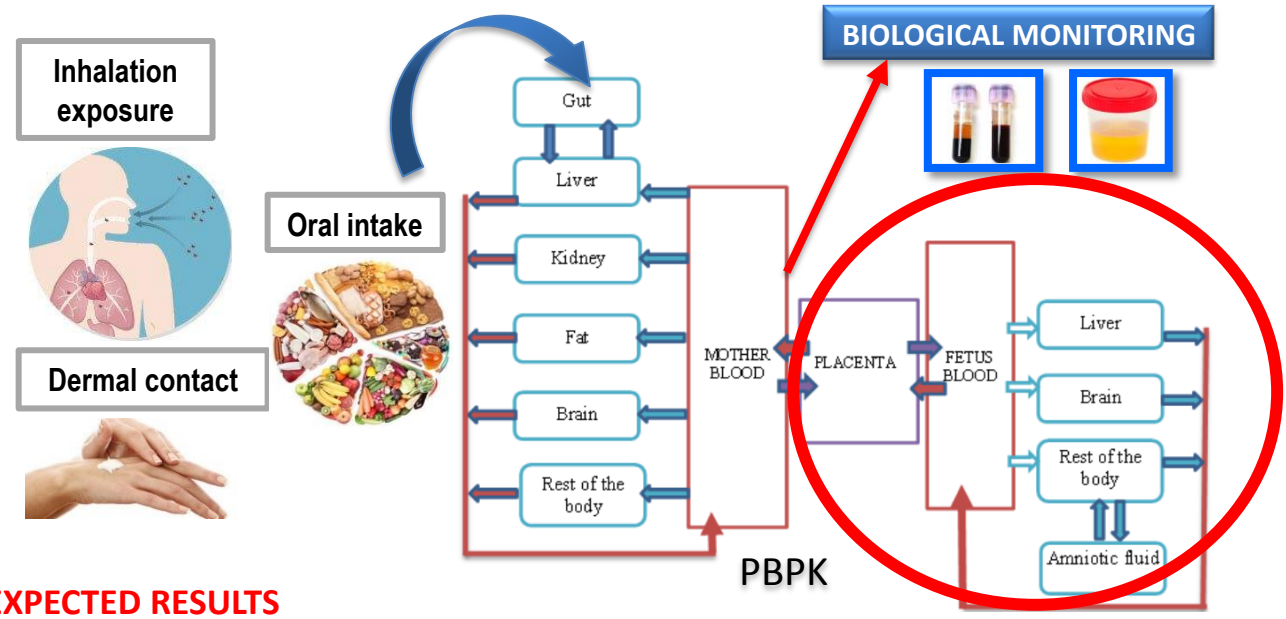
✓Cohort study: Recruitment of a cohort of women/infants (n=150); clinical monitoring; Face-to-face questionnaires and personal interviews; sampling; biomarkers and "OMICS" analysis.

✓Development and validation of a physiologically-based pharmacokinetic (PBPK) model time-dependent with mother and fetus independent modules in order to estimate the degree of prenatal exposure.

✓Simulate and predict the distribution and accumulation of EDs in the body.

✓Biomonitoring of BPA and DEHP in pregnant women and their babies cohort.

✓Study the effect of the EDs on the pathways related with pancreatic β-cell function and adipocyte differentiation and their relationship with health outcomes such as obesity and diabetes diseases.



EXPECTED RESULTS

✓It is expected to find fetus more exposed to EDs compare with their mothers, due to a lack of metabolic activity in fetus.

✓ It is expected to know the contribution of different dietary and non-dietary sources (dermal contact, air inhalation and dust ingestion) to the total exposure of the most distributed EDs.

✓ It is intended to disseminate the study in national and international scientific congresses and in scientific talks.

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