

LabEx DRIIHM

Dispositif de Recherche Interdisciplinaire sur les Interactions Hommes-Milieus



CNRS - Observatoires Hommes-Milieus - Investissements d'avenir

Projet de recherche

Arsenic levels in the placental-fetal unit: a case study in parturient from Aveiro district

Session

2016

Co-porteur(s)

Susana Loureiro

Type de projet

Projet OHM

OHM(s) concerné(s)

- OHMI Estarreja

Mots-clés

[Arsenic](#) [Biomarkers of exposure](#) [Epidemiology](#) [Maternal transfer](#) [Placenta](#) [Umbilical cord](#)

Biologie, Éco-épidémiologie, Santé publique

The Estarreja Chemical Complex (ECC) located in the Aveiro district is one of the major industrial areas of Portugal and contamination by the metalloid arsenic (As) has been documented for this area. Therefore, human exposure to As needs to be evaluated in this region, particularly in sensitive windows of exposure such as the prenatal period. In this context, the main goal of this project is to assess the maternal-fetal transfer of As in women living in the Aveiro district. In this work we will assess maternal and fetal exposure to As using potential non-invasive biomarkers of exposure (As levels in placenta, amniotic membrane and umbilical cord) in order to improve the knowledge about the As retention over the maternal-fetal-placental unit. The potential influence variables (sociodemographic factors, drinking water, food habits and lifestyle) that contribute to maternal and fetal exposure to As during pregnancy will be investigated. Furthermore, the effects of As accumulation patterns on oxidative stress, neurotoxicity and genotoxicity biomarkers will be evaluated in placental tissues. The distribution of As levels along the different counties of the Aveiro district will be one of the main focus of this research project. This will improve the knowledge on the exposure to As in the Aveiro district, and will provide relevant information for the potential action of local authorities if results show concern to human health.

Porteur

Marta Monteiro

Marta Monteiro

Marta S. Monteiro, 42-years-old, is presently Researcher at UA/CESAM (since 31/01/2019), with 10 years of post-doc experience (2 FCT fellowships). She graduated in Biology (2000) at Aveiro University (UAVR). Her MSc thesis (2003) introduced her on environmental toxicology, assessing contamination effects on estuarine fish populations. She obtained her PhD in Biology at UAVR (2009) with a thesis devoted to cadmium phytotoxicity biomarkers and cadmium trophic transfer to animals. She started as post-doc in 2009 (EPOMEX, Mexico; UAVR) investigating effects of endocrine disruptors in fish. Currently, she is working with aquatic embryos as alternative models for the assessment of endocrine disruptors. She has worked on human exposure to contaminants and their effects, particularly in sensitive phases of development such as pre-natal period. Overall, she has 36 papers published (h-index=12, w-index=4, 539 citations). She is also author of 1 book, 1 book-chapter and over 50 communications in international meetings. She has been involved as team member in 1 European project (FENOMENO), 7 national projects funded by FCT, one as PI (DOMINO EFFECT), and was PI in 2 OHM-Estarreja funded projects. Since her PhD she has (co-)supervised 5 undergraduate student, 3 research technicians and 5 MSc students, 2 of them as main supervisor, 1 PhD student and 1 pos-doc. She has been actively involved in outreaching activities conducted at local organizations and schools and in dissemination of results to general public.

CV overview and metrics:

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Participants

Susana

Loureiro

Susana Loureiro, born in 1975, is graduated in Biology (1997) and MSc in Ecology (2000) by University of Coimbra. She obtained her PhD at the University of Aveiro (UA) in 2004, on the assessment of contaminated soils. After her PhD, as team member and UA deputy of FP6 EU project NoMiracle, she started to build her team and refocused her research on the effect of combined stressors/mixtures. She succeeded on several National funding applications, starting in 2007 as PI of project AGROMIX, on soil mixture toxicity. In 2010, as PI, she got her 2nd project CLIMAFUN on the combined effects of abiotic factors and chemicals in soils and the 3rd project FUTRICA on chemical flow in aquatic trophic chains. As a follow-up, evolutionary concepts, chemical mixtures and pulse exposures on several generations of cladocera have been addressed in a 4th project RePULSE (2012). In addition to national funding, she has built an international, multidisciplinary network which enabled her to participate...