

POSITION

1. Project Title/ Job Position title:

Identification of Halogenated Endocrine Disruptors (HEDs) damaging thyroid hormone metabolism in mouse pregnancy.

2. Area of Knowledge:

Life Sciences

3. Group of disciplines:

Human Biology, Microbiology, Genetics, Cell Biology, Genomics and Proteomics, Biochemistry

4. Research project/ Research Group description

Endocrine Disruptors (EDs) are exogenous substances that alter the function of the endocrine axes and cause adverse health effects in intact organisms, or in their progeny. Pregnant women are particularly sensitive to endocrine disruption since EDs can affect in multiple ways the correct configuration of the growing embryo. Especially worrying are the effects for the foetal brain of the maternal thyroid disruption since it can lead to permanent neurodevelopmental deficits.

The Thyroid Molecular Laboratory works within the structure of IdiPAZ's Institute for Medical and Molecular Genetics (INGEMM). It is led by Dr. José Carlos Moreno. The group has developed a knock-out mice model for Dehal1 to allow advanced studies of endocrine disruption. Dehal1 is the key enzyme in iodine regulation and it is sensitive to HED disruption. Therefore, the model permits better discrimination of exogenous interference with the thyroid.

The project aims to take advantage to this model by addressing the following objectives:

To determine the hormonal and neurodevelopmental effects of the exposure to validated HEDs on wild-type and Dehal1 knockout mice during pregnancy.

To study the effect of different levels of iodine supply in the animal diets over such effects in the offspring.

To identify the molecular mechanisms underlying and mediating the cell damage in this murine model.

The candidate will contribute to the isolation of the most relevant HEDs disrupting the mammalian thyroid axis through impairment of Dehal1 function during pregnancy, and determine their neurodevelopmental consequences in the offspring. By understanding of the molecular (and environmental) factors modulating Dehal1 expression in the toxicological frame, the project will contribute to develop strategies to protect against maternal hormonal derangements and their deleterious effects in the offspring. Finally, results of the project will inform further epidemiological-toxicological studies in humans.

5. Job position description

Role: The candidate will be in charge of performing the experimental activities of the project, in collaboration with other members of the group, in order to explore a series of chemicals suspected to exert potent endocrine disruption during pregnancy. He/she will be trained accordingly and mentored through the completion of his/her PhD thesis.

Responsibilities

Set up and perform experiments, maintain experimental resources (as cell lines, reagents, etc.) according to protocols, analyze & interpret results and contribute to the development of experimental strategies with accuracy and honesty.

Keep updated the laboratory notebook and properly store and manage the data produced during the project.

Collaborate with colleagues and participate in team activities (such as meetings, seminars, workshops, etc.) across the research group and wider scientific community while keeping up to date with current knowledge and recent advances.

Participate in knowledge exchange with both society and industry, to promote the value of research in public health and to contribute to the dissemination of his/her research results in the principles of EU's Open Science policy.

Undertake any other duties of equivalent standing as assigned to him/her.

Skills

Degree in Life Sciences (Biology, Biochemistry, Biotechnology or similar).

Experience with laboratory animals is desirable (FELASA accreditation).

Experience in cell culture is desirable.

Motivation, critical thinking and problem-solving oriented skills.

Good interpersonal skills, including team working.

Good communication skills, willingness to engage in public presentations and ability to transmit complex concepts in a clear way.

Good time and workload management skills, including both initiative and flexibility.

GROUP LEADER

- 1. Title:** Dr.
- 2. Full name:** José Carlos Moreno
- 3. Email:** j.morenonavarro@gmail.com
- 4. Research project/Research group website:** <http://www.idipaz.es/DefaultEN.aspx>