

PhD offer:

quantification, monitoring and mitigation of furan in infant foods

Description of PhD subject:

The Chinese-European project SAFFI (Safe Food for Infants in China and the EU, 2020-2024) aims at developing an integrated approach to enhance the identification, assessment, detection and mitigation of safety risks raised by microbial and chemical hazards all along EU and China infant food chains.

In the European SAFFI project, this PhD work will focus on chemical risks and more particularly on the risks associated with the generation of process-induced toxicants of furan family.

The main challenges of this PhD are:

- develop a robust and reliable analytical method for determining furan in specific food matrices.
- determine the fate (generation, degradation, migration) of furan along the food chain by taking as a case study three emblematic products of infant nutrition: small jars of fish and vegetables, infant cereals and fruit purees.
- acquire knowledge on the impact of processes and consumer household practices on furan formation, in particular to provide recommendations for consumers to use.
- propose rapid and inexpensive approaches, allowing monitoring of the generation of furan and / or its derivatives by manufacturers (auto control) by relying on the search for easily measurable markers identified by procedomics.

Material resources available to the PhD student:

The student will benefit from the facilities of the MASS team of Quality of Animal Products unit (INRAE) for sample preparation, extraction and concentration, as well as the analytical park dedicated to the detection of contaminants and volatile compounds. The laboratory has different analytical systems: GC-GC-Quad / MS, GC × GC-ToF / MS and GC-Q-HRMS Orbitrap[®] which will allow the doctoral student to perform the measurements of furan in a food matrix and to implement the procedomics experiments.

Partnership:

As part of the SAFFI project coordinated by the MASS team of the QuaPA unit, the PhD student will have the opportunity to collaborate closely with:

- IRTA (Institute of Recerca I Tecnologia Agroalimentaries, Spain) for the study of new innovative processes allowing to reduce process-induced toxicants in the infant products studied.
- the industrial partners of the project; HiPP (Germany), FrieslandCampina (Netherlands), Yiotis (Greece) for the study of the health quality of their infant foods.

PhD Start dates: between March and September 2021

Contacts:

Please send your CV and cover letter to Maïa MEURILLON (maia.meurillon@inrae.fr) and Erwan ENGEL (erwan.engel@inrae.fr)