

## 2023 - JOB PROFILE

**POSITION TITLE: MC Toxicology**

**Teaching department: BPSA**  
**Teaching unit: Pharmacology and Toxicology**  
**Research unit: UMR INRAE Oniris LABERCA**

### NATURE OF EMPLOYMENT

- **Establishment** : Oniris
- **Recruitment Grade**: MC
- **CNECA section**: 7
- **Disciplines to be filled**: Animal, Environmental and Food Toxicology
- **Type of recruitment**: Competition in 2nd session 2023
- **Renoirh Post No.**: A2ONI00353

### CONDITIONS DE RECRUTEMENT

The position is accessible by mobility for any teacher-researcher civil servant. See the memo from the Ministry of Agriculture and Food Sovereignty:

<https://info.agriculture.gouv.fr/gedei/site/bo-agri/instruction-2023-431>

However, if it is not filled by mobility, the post is also accessible to any eligible European citizen by competition. For any information, consult Order AGRS2135763A of the Official Journal of the French Republic:

<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000047719919>

### GENERAL ARGUMENTS AND OBJECTIVES

Toxicology is a science that studies the harmful effects of chemical substances, of natural or artificial origin, on living organisms. For her knowledge, research approach or methods, she draws on most of the basic biological sciences, medical disciplines, epidemiology and various fields of chemistry and physics. It provides medicine and epidemiology with essential information to understand the etiology and study the associations between exposures to chemical substances and pathologies in humans or animals. Its teaching in veterinary schools is now essential in view of the multiple societal questions relating to chronic exposure to these chemical substances of domestic or wild animals, humans and their environment and *ultimately* to the associated risk. In this sense, veterinary toxicology includes several components:

- Clinical: Poisoning, acute or chronic, occurs in all domestic species, and the veterinarian must be able to make the diagnosis and implement the treatment. Knowledge of adverse drug reactions also falls under this approach,
- food: exposure of food-producing animals may lead to the presence of toxic contaminants in the food produced, and the associated risk to the consumer should be assessed,
- experimental: the use of laboratory animals to assess the toxic potential of chemical substances for humans or animals remains unavoidable,
- Environmental: Ecotoxicology and environmental toxicology are fast-growing disciplines, in which the veterinarian has his place.

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The scientific project is in the field of chemical risk assessment and expology with a particular focus on toxico-kinetic-physiological models (PBTk), a key tool to support exposomics research. The models will characterize the links between external exposures, internal dose and associated biological response in humans. They will support the interpretation of human biomonitoring data from the perspective of exposure reconstruction and associated risk characterization. This area is one of INRAE's priorities and in particular of its ALIMH department, the supervisory partner of the home unit.

## **MISSIONS**

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### **- TEACHING**

The candidate will participate in toxicology courses on mechanistic, regulatory, clinical, food and environmental aspects.

The recruited candidate will mainly participate in theoretical, directed and clinical courses in toxicology in the four-year core curriculum:

- Basic and regulatory toxicology in 2nd year, including toxicity testing conducted as part of the safety evaluation of a drug and the determination of maximum residue limits (MRLs)
- food, clinical and environmental toxicology in the<sup>3rd</sup> year,
- Clinical toxicology in production animals, companion animals and equidae in the<sup>5th</sup> year with the stated desire to strengthen the dialogue between teachers of pharmacology and clinical sciences: use of specific, eliminatory and symptomatic treatments, prescribed dosages (doses, timing, conditions of administration, ...), MRLs and choice of waiting times for prescribed drugs, etc. His contribution to the teaching of clinical and environmental toxicology will be based on his participation in the organization of CAPAE-Ouest, through the supervision and supervision of veterinarians and students who lead it.

The recruited candidate will also participate in the theoretical and clinical courses of the 6th<sup>year</sup> of deepening in production animals, companion animals, equines, research and health public veterinarian with the same desire to strengthen dialogue with clinical colleagues. He will also be involved in the theoretical teaching of masters co-accredited by Oniris.

The recruited candidate will also be involved in internship training in clinical and food toxicology and will be involved in the continuing education of veterinarians in toxicology.

The recruited candidate will be expected, in initial and continuing training, on pedagogical innovation, including the design of e-learning online teaching.

### **- RESEARCH**

The research activity will be carried out in the LABERCA UMR, whose research questions target the characterization of the human chemical exposome. The scientific project of the candidate (e) belongs to the field of chemical risk assessment in humans with a particular focus on toxico-kinetic-physiological models or PBTk, mathematical models that allow the prediction of absorption, distribution, metabolism and excretion (ADME) of natural or synthetic chemicals in humans or animals. The research and optimization around these models will give the UMR the ability to access individual or population exposure data from biomonitoring data it generates, which remain however too limited in number with regard to the expectations and requirements of modern epidemiology. They will also make it possible to evaluate the different routes of external exposure of these individuals. The models will also make it possible to reconstruct the life-long impregnation trajectories of individuals for whom point external exposure data are available. At the installation of the candidate, the project will be based on the appropriation of PBTk models in collaboration with the historical partners of the UMR, French (Anses-DER in particular) and European (partners of the HBM4EU, PARC projects). The supervision of the Associate Professor will be provided by researchers from the UMR, particularly those specialized in programming and bio-statistics with the establishment of a close link with the toxicologists of the Establishment. Quickly, the models will be applied to UMR projects, whether they are external or internal exposure. The recruited Associate Professor will benefit from the networks of the Research Unit, the supervision of two INRA researchers and a project mode operation in a quality assurance environment.

## **PROFIL DU CANDIDAT SOUHAITE**

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Fluency in French required.

Veterinary doctor. PhD, preferably in toxicology. Good knowledge of pharmacological classes and their application in therapeutics. Expertise in pharmacokinetic modelling and a strong interest in programming. Ability and motivation to work as part of a team and in interdisciplinary collaboration. Curiosity, adaptability and a taste for scientific research. Willingness to advance knowledge and disseminate it. Good oratory and communication skills. Motivation and willingness to develop international collaborations. Proof of a level in animal experimentation design would be welcome. Training potentially required: European College of Veterinary Pharmacology and Toxicology (ECVPT).

### **CONTACTS**

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For further information :

<https://www.oniris-nantes.fr/accueil/travailler-a-oniris>

<https://www.oniris-nantes.fr/en/home/working-at-oniris>