


POSTDOCTORAL POSITION OT-19561

# POSTDOC ON THE DYNAMIC OF METAL IONS DURING HOST-PATHOGEN INTERACTIONS

 37380 NOUZILLY

## INRAE presentation

The French National Research Institute for Agriculture, Food, and Environment (INRAE) is a major player in research and innovation. It is a community of 12,000 people with 272 research, experimental research, and support units located in 18 regional centres throughout France. Internationally, INRAE is among the top research organisations in the agricultural and food sciences, plant and animal sciences, as well as in ecology and environmental science. It is the world's leading research organisation specialising in agriculture, food and the environment. INRAE's goal is to be a key player in the transitions necessary to address major global challenges. Faced with a growing world population, climate change, resource scarcity, and declining biodiversity, the Institute has a major role to play in building solutions and supporting the necessary acceleration of agricultural, food and environmental transitions.

## Work environment, missions and activities

*Situated in the Loire valley, the unit «Infectiology and Public Health» (ISP) is part of the Val de Loire INRAE Research Center and is a joined research unit between INRAE and the University of Tours. ISP research activities are dedicated to the understanding of the interactions taking place between the host and pathogens and are in line with the "One Health" concept. ISP hosts 160 staff members, including 80 researchers, in 10 research teams and core facilities such as the International Center for Bacterial Pathogens (CIRM-BP) and the team "Imaging and infectiology". The research teams are located on the INRAE campus in Nouzilly (North of Tours and 1h from Paris by High-Speed Train).*

You will join the **MiMoSa** team (Microbiota, Monogastrics and *Salmonella*) which comprises experts in *Salmonella* pathogenicity and host-pathogen interactions. The position is available for 18 months.

We have recently identified a new antimicrobial response in macrophages that employs metal ions toxication and/or starvation (e.g zinc, copper, iron) to resist *Salmonella* infection. The mechanism first needs to be fully characterised in order to modulate and enhance this antibacterial response. You will investigate 1) the precise dynamic of this response within the host cell; 2) if the dynamic is different upon the cell type and the host-species 3) and how intracellular *Salmonella* escapes this antimicrobial pathway.

You will be in charge of:

- Creating several bacterial fluorescent reporters to follow the response to variation in metal ions concentration (zinc, copper, iron) in live imaging.
- Monitoring the dynamic of metal ions within the host cells using dyes and fluorescent reporters with the help of our dedicated microscopy team.
- Characterising the zinc response in different host species (human, mouse, pig, chicken) and different cell types (epithelial, macrophages, neutrophils, organoids...)

# Training and skills

## PhD

- **Recommended training:** PhD in Cell Biology, Immunology or Microbiology. The candidate should have published peer-reviewed research articles as the first-author.
- **Knowledge required:** cell culture and molecular biology (e.g cloning)
- **Appreciated experience:** Previous work in BSL2 with pathogen(s), skills in bacteriology, microscopy (e.g confocal), ability to work successfully in a collaborative and inclusive environment, manuscript/grant writing.
- **Skills sought:** autonomous, curious, ability to set up and perform well designed experiments, good presentation skills (lab meeting, conferences)

# INRAE's life quality

By joining our teams, you benefit from (depending on the type of contract and its duration):

- up to 30 days of annual leave + 15 days "Reduction of Working Time" (for a full time);
- parenting support: CESU childcare, leisure services;
- skills development systems: training, career advise;
- social support: advice and listening, social assistance and loans;
- holiday and leisure services: holiday vouchers, accommodation at preferential rates;
- sports and cultural activities;
- collective catering.

# How to apply

Send in a combined PDF with a motivation letter stating why you are interested to join the MiMoSa research team and this research project (max 2 pages), a CV, a list of publications and 2 to 3 referent names and their emails.

By e-mail: [ronan.kapetanovic@inrae.fr](mailto:ronan.kapetanovic@inrae.fr) (he/him)

## OFFER REFERENCE

- **Contract:** Postdoctoral position
- **Duration:** 18 month
- **Beginning:** 01/04/2024
- **Remuneration:** 3135 € gross salary


- **Reference:** OT-19561
- **Deadline:** 11/02/2024



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Val de Loire

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## CONTACT

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