Horizon Europe Partner Search Form

■ I offer my expertise to participate

☐ I am planning to coordinate a proposal and I am looking for partners

Short summary of my partner search (3 lines max.) :

Topic

Topic we are interested in:

We are studying the adverse effects of the microbial pesticides made of ***Bacillus thuringiensis*** (Bt). Bt bacteria are the most used microbial insecticides worldwide and their use is expected to greatly increase in the next decade due the international policies fostering the use of biopesticides instead of synthetic pesticides. Thus, the increasing environmental dispersion of Bt products raises the question of their putative impacts on both human health and the environment.
Our team is interested in the mechanisms of defense of the organism against microbes (i.e. Bt) and the pathophysiological consequences when those mechanisms failed. Focusing on host-pathogen interactions, **we are studying gut physiology, intestinal stem cell functions in the maintenance of gut cellular homeostasis and innate immunity** in *Drosophila melanogaster*.

Project information

Tentative title:

Evaluating the adverse effects of the microbial pesticides made of *Bacillus thuringiensis*

Project idea:

The project would focus on the risk assessment of *Bacillus thuringiensis*-based biopesticides that are widely used in agriculture, both for the environment (animal health and biodiversity) and for human health.

Potential contribution of my organisation to the project:

We can provide skills and expertise in:
- Drosophila genetics, development and physiology
- Gut physiology and stem cells
- Innate immunity
- Cell and molecular biology
- Microbiology (Bacillus thuringiensis spore production)
- Biochemistry (Bt insecticidal Cry toxins' production and purification)

Role in the project:

- [x] Research
- [ ] Training
- [ ] Dissemination
- [ ] Technology Development
- [ ] Other

Experience as a coordinator:

- [x] Yes
- [ ] No

Experience as a partner in a collaborative project:

- [x] Yes
- [ ] No

Consortium:

It was an ANR and an Idex (UCA-JEDI) funding:
1- Team "Microbial virulence and inflammatory signaling in disease" (C3M, INSERM).
2- Bacteriology laboratory at the university Hospital of Nice.
3- Bacillus and Clostridium team – Staphylococcus, Bacillus and Clostridium unit – Food safety laboratory – ANSES

Target Coordinator/Partner sought

Organisation type:

- [x] Higher Education/University
- [x] Public Research Organisation
- [ ] Large Scale Enterprise
- [ ] Small and Medium Scale Enterprise
- [ ] Public Body/Authority
- [ ] International NGO
- [ ] National NGO
- [ ] Other, please specify:

We are looking for the following expertise/competencies:

Contact details

Contact person :	GALLET Armel & ROUSSET Raphaël
Organisation :	Institut Sophia Agrobiotech (CNRS/INRAE/ Univ Côte d'Azur)
Country :	FRANCE
E-mail :	gallet@unice.fr & Raphael.Rousset@unice.fr
Phone :	33 (0)4 92 38 64 41
Organisation Website :	https://www6.paca.inrae.fr/institut-sophia-agrobiotech_eng/Teams/BES

Additional information on the organisation (previous projects, publications, etc.):

- Ben Khedher et al.,Complete Circular Genome Sequences of Three Bacillus cereus Group Strains Isolated from Positive Blood Cultures from Preterm and Immunocompromised Infants Hospitalized in France. ***Microbiol Resour Announc***. Oct 14;10(41):e0059721 (**2021**).

- Nawrot-Esposito et al., *Bacillus thuringiensis* bioinsecticides induce developmental defects in non-target *Drosophila melanogaster* larvae. ***Insects***, *11*(10), 697 (**2020)**

- Babin A. et al., Differential side-effects of *Bacillus thuringiensis* bioinsecticide on non-target *Drosophila* flies. ***Scientific Reports*** 10, 16241 (**2020**).

- Castella C. et al., Transcriptomic analysis of *Spodoptera frugiperda* Sf9 cells resistant to *Bacillus thuringiensis* Cry1Ca toxin, reveals that extracellular Ca2+, Mg2+ and production of cAMP are involved in toxicity". ***Biology Open***: Apr 18;8(4)bio.037085 (**2019**).

- Benguettat O. et al., The DH31/CGRP enteroendocrine peptide triggers intestinal contractions favoring the elimination of opportunistic bacteri". ***PLOS Pathogens***: 14, e1007279 **(2018)**.

- Loudhaief R. et al., Apoptosis restores cellular density by eliminating a physiologically or genetically induced excess of enterocytes in the *Drosophila* midgut. ***Development***: 144:808-819 (**2017**).