

Dissecting the origin and formation of *Sitophilus* spp bacteriomes

Host laboratory : UMR INRAE/INSA de Lyon 203 BF2I (Biologie Fonctionnelle, Insectes et Interactions) ; INSA Bâtiment Louis Pasteur, 20 avenue Albert Einstein, 69621 Villeurbanne cedex. <http://bf2i.insa-lyon.fr/>

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Project : Weevils are a common crop pest causing an estimated worldwide loss of hundreds of millions of dollars and hence their study is crucial for ecological and economical reasons. *Sitophilus oryzae*, the rice weevil, has partnered with the gram-negative bacteria *Sodalis pierantonius*, allowing the insect to thrive despite such a poor diet. The bacteria are present within specialized insect cells called bacteriocytes, that are organized into organs, the gut and ovarian bacteriomes. The objective of the master internship is to characterize and culture the cells forming gut and ovarian bacteriomes. For this, the student will perform flow cytometry, cell culture, and prepare single cell extracts for sequencing.

Master student: We are looking for a highly motivated master student, who will learn how to manipulate weevils, perform molecular and cellular biology. The student will be closely working with the two co-supervisors and other members of the BF2i laboratory. We expect a proactive person who enjoys being part of a team. Perspectives will involve genome-wide analysis.

Lab: The BF2i laboratory is affiliated to both the National Research Institute for Agriculture, Food and the Environment (INRAE) and the 'Institut National des Sciences Appliquées de Lyon' (INSA de Lyon). The lab research work focuses on the biology of different types of interactions involving insects, plants and insect symbiotic bacteria. It also aims at investigating emerging technologies required for insect pest control. The successful applicant will benefit from fully equipped laboratories for genomics, molecular biology, biochemistry and histology research.

Environment: Lyon is built around the Rhône and Saône rivers. It is the second economic French city and its rich history and architecture made it part of the Unesco World Heritage. The city is also culturally very dynamic. Within France, Lyon has a strategic geographical position, close to the Alps and the Mediterranean coast, Switzerland and Italy. Paris is only two hours away by TGV. Last but not the least, Lyon is considered the French capital of gastronomy, offering a wide variety of food and wine from the surrounding areas.

Other informations

Candidates should send an email including a CV and a short motivation letter.

Candidates are motivated, independent and proactive. Candidates willing to pursue a PhD in the host laboratory are preferred.

Keywords

Bacteriocyte, symbiosis, insects