



ELiS
engaged life science



Inserm



PhD Proposal

We are seeking a Master 2 student (or finishing their Master 2 in June 2026), interested in pursuing a PhD, focusing on the investigation of new antimicrobial peptides to combat plant pathogens.

PhD Supervisions :

- Dr. [Amir Pandi](#) (Engaged Life Science Lab - INSERM Paris) Specialized in the fields of synthetic biology, AI-assisted modeling, and microbiology.
- Dr. [Bruno Guillotin](#) (Institute of Plant Sciences of Paris-Saclay - CNRS), expert in plant development, and molecular biology.

Summary:

The current main challenge in agriculture is to maintain food production while facing multiple threats such as increasing world population, temperature increase, health issues due to toxic agrochemicals and uprising of pathogens resistant to pesticides. Developing novel, alternative, but most importantly safe methods is of paramount importance. In this PhD proposal we aim to design, using AI approaches, new pathogen-specific antimicrobial peptides for a more sustainable agriculture. More specifically, de novo-designed peptides against one of the most important crop diseases worldwide, *Pseudomonas syringae*, will be first tested for activity against this pathogen in vitro. Then the most promising candidates will be tested on *Arabidopsis* and Tomato by exogenous application and expression of the candidates by agrobacterium mediated transformation. This PhD will train the student in the application of machine learning approaches, pathogen development, multiple techniques of plant biology and help find virtuous solutions to fight pathogens in plants.

To apply please send:

- Detailed CV
- Motivation letter
- Contact of two supervisors/referee

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Timeline:

- Feb 20 to March 10: Candidate interview.
- May 26, 2026: Results
- Sept, 2026: Beginning of PhD for 3 years.