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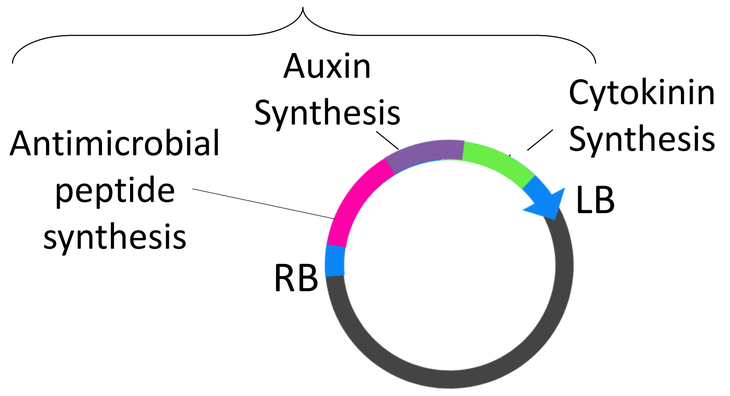
# Evaluation of a new biological solution combining antimicrobial peptides and a delivery system based on *Agrobacterium tumefaciens* for the control of *Xylella fastidiosa*

## The Symbiont™ Delivery Method

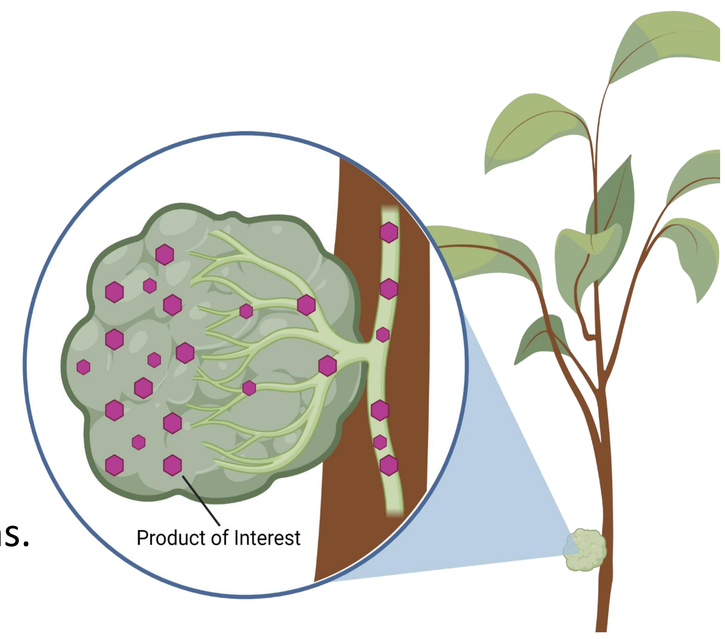
### How does it work ?

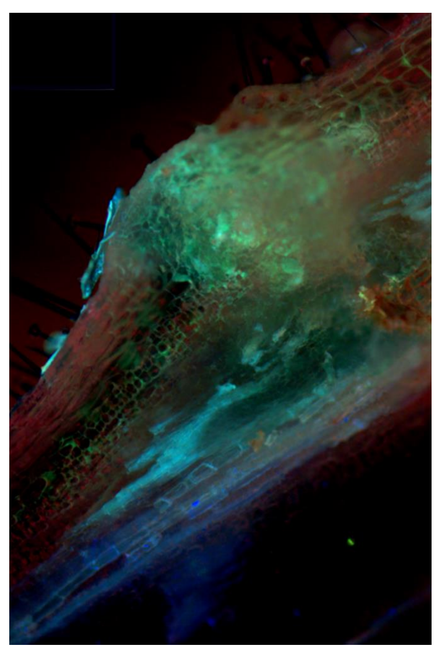
Using engineered plasmids, Symbionts produce and deliver therapeutic molecules directly to the host plant vascular system




### One single technology for production and delivery

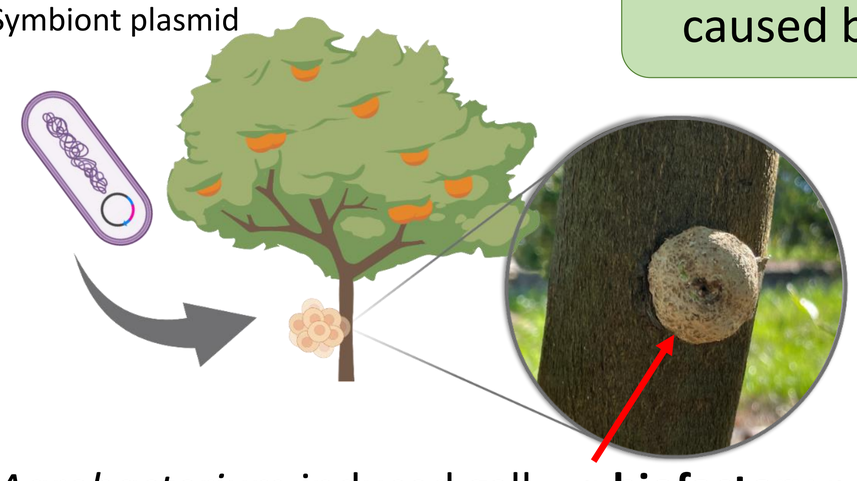
In Symbiont™, host cells are modified to divide autonomously using plant growth regulator genes from *Agrobacterium tumefaciens* and to produce biological molecules that can improve host-plant defenses against pathogens.



Symbiont expressing GFP

Disarmed Agrobacterium + Symbiont plasmid



*Agrobacterium*-induced gall = « **biofactory** »

This method is being tested on citrus greening (HLB) caused by *Candidatus* Liberibacter asiaticus (CLas)

Greenhouse evaluation of Symbionts in potted, infected citrus trees shows promising results to reduce symptoms and bacterial titer.

Main advantages of this method : it can potentially cure diseased plants and trees, and confer resistance to mature fruit trees and perennial woody plants.

### Similarities between *C*Las and *Xylella fastidiosa:*

- Plant pathogenic Proteobacteria
- Transmitted by hemipteran insect
- Colonize plant vascular system
- No effective treatment

A potential new efficient approach to fight against *Xylella fastidiosa*

Pierce's disease on grapevine

Olive quick decline

**> Objective : evaluation of proof of concept of Symbiont strategy for the control of *Xylella fastidiosa* in olive trees and grapevine**

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