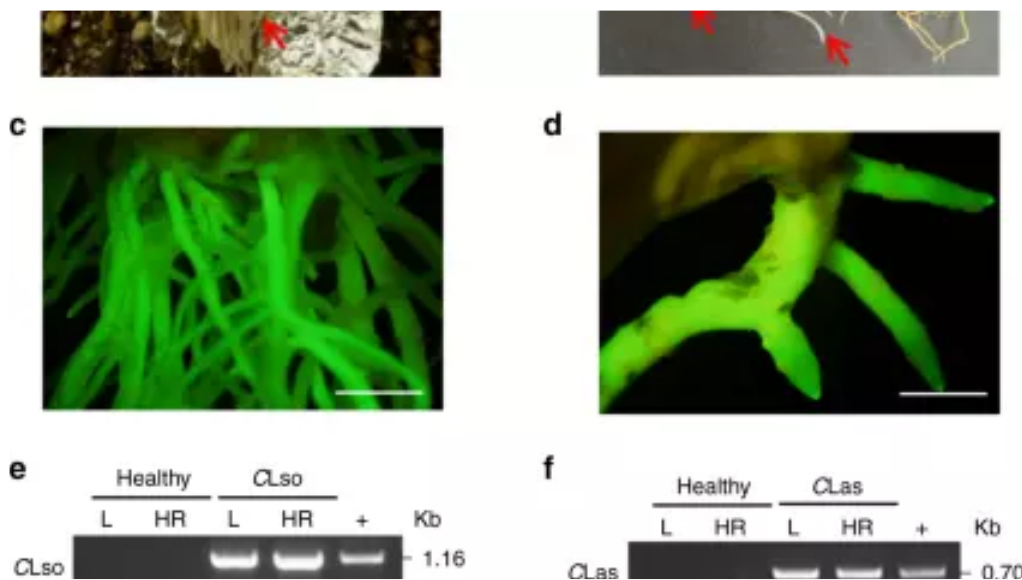


News Break > Plant hairy roots enable high throughput...

Plant hairy roots enable high throughput identification of antimicrobials against *Candidatus Liberibacter* spp.

Nature.com | 7d



A major bottleneck in identifying therapies to control citrus greening and other devastating plant diseases caused by fastidious pathogens is our inability to culture the pathogens in defined media or axenic cultures. As such, conventional approaches for antimicrobial evaluation (genetic or chemical) rely on time-consuming, low-throughput and inherently variable whole-plant assays. Here, we report that plant hairy roots support the growth of fastidious pathogens like *Candidatus Liberibacter* spp., the presumptive causal agents of citrus greening, potato zebra chip and tomato vein greening diseases. Importantly, we leverage the microbial hairy roots for rapid, reproducible efficacy screening of multiple therapies. We identify six antimicrobial peptides, two plant immune regulators and eight chemicals which inhibit *Candidatus Liberibacter* spp. in plant tissues. The antimicrobials, either singly or in combination, can be used as near- and long-term therapies to control citrus greening, potato zebra chip and tomato vein greening diseases.

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Antimicrobial Throughput *Candidatus Liberibacter* Washington , Dc Plant Roots

United States Green Fluorescent Protein Potato Olympus Corporation

Polymerase Chain Reaction Tomato ZC HLB CLas Asian

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