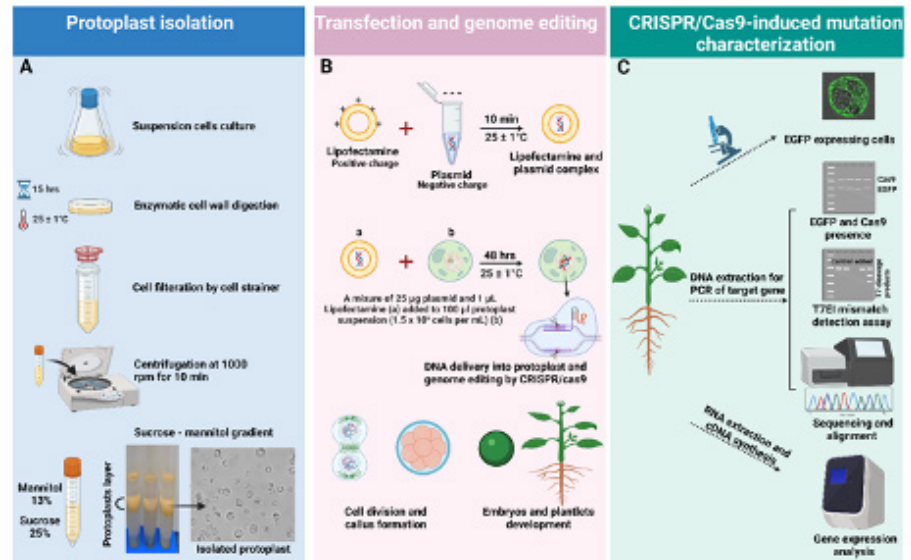


Utilizing Genetic-based Solutions for Developing HLB-Resistant Citrus

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The overall goal of this project is to produce solutions that can be utilized to rapidly implement citrus improvement strategies to combat HLB in citrus. While resistant citrus cultivars are desirable, tolerance to the bacterium, allowing the plant to thrive in an HLB-endemic environment can be a more practical approach.

The two main goals of this project are: 1) To understand and implement strategies that will allow the citrus plant to defend itself against HLB. This will be

done primarily by engineering or genome editing citrus scion and rootstocks to have enhanced Systemic Acquired Resistance (SAR), so that trees can better protect themselves following infection. This SAR process is analogous to the innate immune system found in animals and can be induced through the upregulation of several genes. 2) To understand the HLB resistance mechanism in some citrus relatives such as the Australian limes and utilize

that knowledge to improve conventional citrus. The short-term outcome of this project will be in the development of HLB-tolerant breeding populations.

At the end of this project, we will have produced and evaluated several populations of engineered or conventionally bred citrus against HLB. Engineered rootstocks that can robustly protect the non-engineered scion against HLB will be made available for deregulation and stakeholder trials.

Funding

