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Implications of bacteria–bacteria interactions within the plant microbiota for plant health and productivity

Key words: Plant microbiome; Bacteria–bacteria interaction; Plant pathogen; Crop production; Molecular interaction

Research Summary

In this review, we gather recent findings on bacterial interactions, emphasizing their impact on plant health and productivity. Understanding these interactions is crucial for elucidating microbiota establishment in various hosts, disease dynamics, and the development of novel applications like synthetic communities (SynComs) or microbiome engineering.

The article is divided into three sections for discussion:

- Modes of bacteria-bacteria interactions in plants;
- Agricultural relevance of bacteria-bacteria interactions;
- Concluding remarks and perspectives.

Innovation points

Modes of bacteria-bacteria interactions in plants

(1) contact-dependent interactions

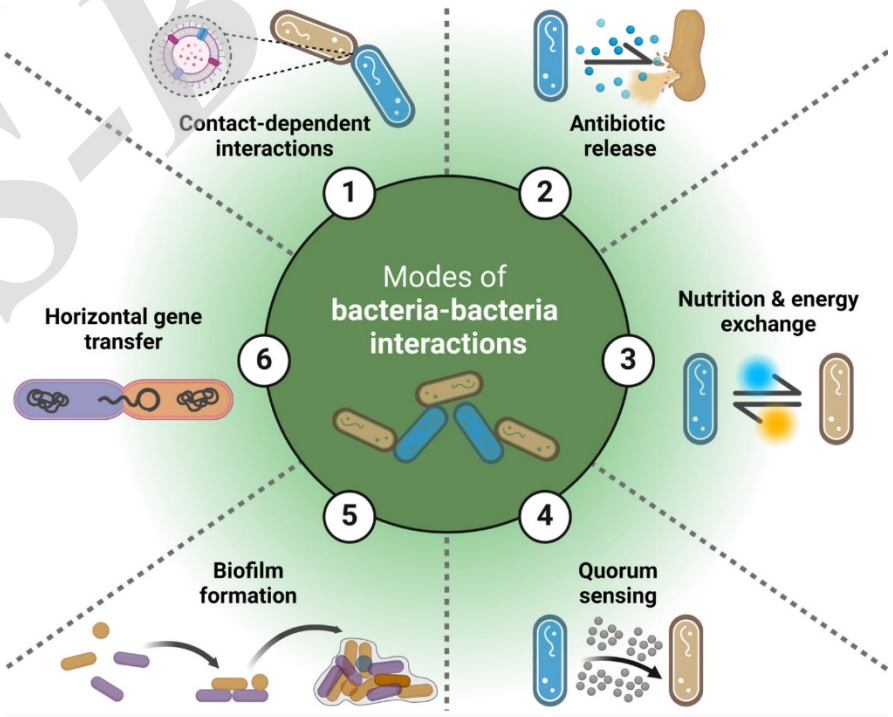
(2) chemical substances

(3) nutrient and energy exchange

(4) quorum sensing systems

(5) biofilm formation

(6) horizontal gene transfer



Innovation points

Schematic representation of various scenarios where plant fitness and/or productivity are improved by specific bacteria-bacteria interactions.