

CONFERENCIA

TÍTULO:

'Incoming pathogens team up with harmless "resident" bacteria'

SUBTÍTULO:

Interspecies and interkingdom signaling in plant-associated bacteria

PONENTE:

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PROCEDENCIA PONENTE:

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ORGANIZA:

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RESUMEN

The seminar was focused on "Interspecies and interkingdom signaling in plant-associated bacteria". Studies of chemical signaling between plants and bacteria in the past have been largely confined to two models: the rhizobial-legume symbiotic association and pathogenesis between agrobacteria and their host plants. Recent studies are beginning to provide evidence that many plant-associated bacteria undergo chemical signaling with the plant host via low-molecular-weight compounds. Plant-produced compounds interact with bacterial regulatory proteins that then affect gene expression. Similarly,

bacterial quorum-sensing signals result in a range of functional responses in plants. This seminar attempts to highlight current knowledge in chemical signaling that takes place between pathogenic bacteria and plants. This chemical communication between plant and bacteria, also referred to as interkingdom signaling, will likely become a major research field in the future, as it allows the design of specific strategies to create plants that are resistant to plant pathogens.

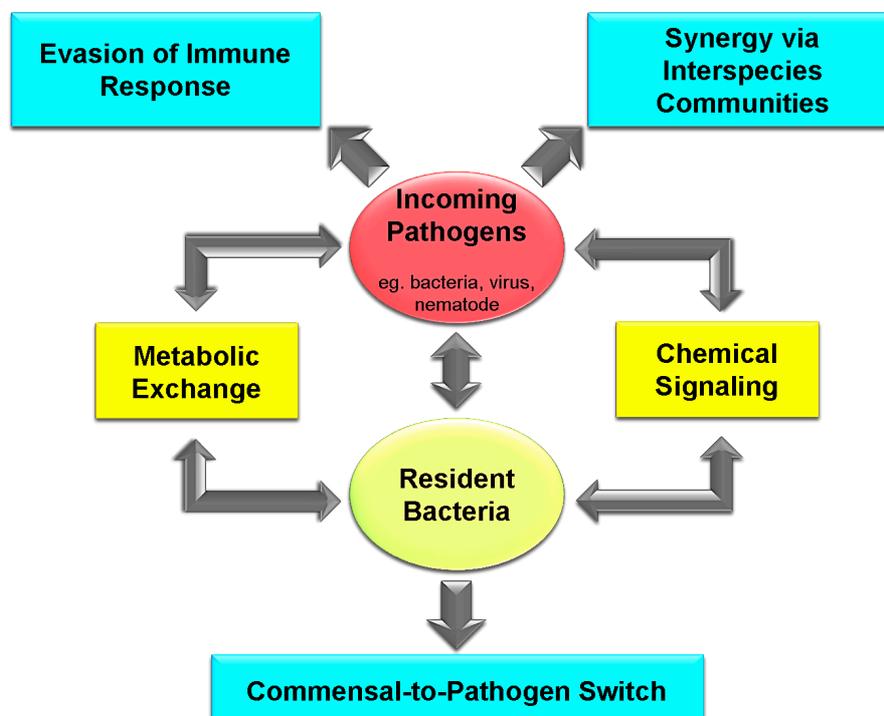


Figure 1: The interaction of bacterial pathogens with other bacteria

Microbial diseases occur as a result of multifarious host– pathogen interactions. However, invading pathogens encounter a large number of different harmless and beneficial bacterial species, which colonize and reside in the host. Surprisingly, there has been little study of the possible interactions between incoming pathogens and the resident bacterial community. Recent studies have

revealed that resident bacteria assist different types of incoming pathogens via a wide variety of mechanisms including cell–cell signaling, metabolic interactions, evasion of the immune response and a resident-to-pathogen switch. This calls for serious consideration of pathogen– microbe interactions in the host with respect to disease severity and progression.