MICROBIOMA E MICROBIOTA

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https://bit.ly/39coIbU

Last lesson recap

1. DNA Metabarcoding

2. Several techniques can be employed to decipher the microbiota functions

3. System biology is the discipline that integrates the -omics techniques to formulate models that describe the structure of the system

Functions of plant-associated microbiomes

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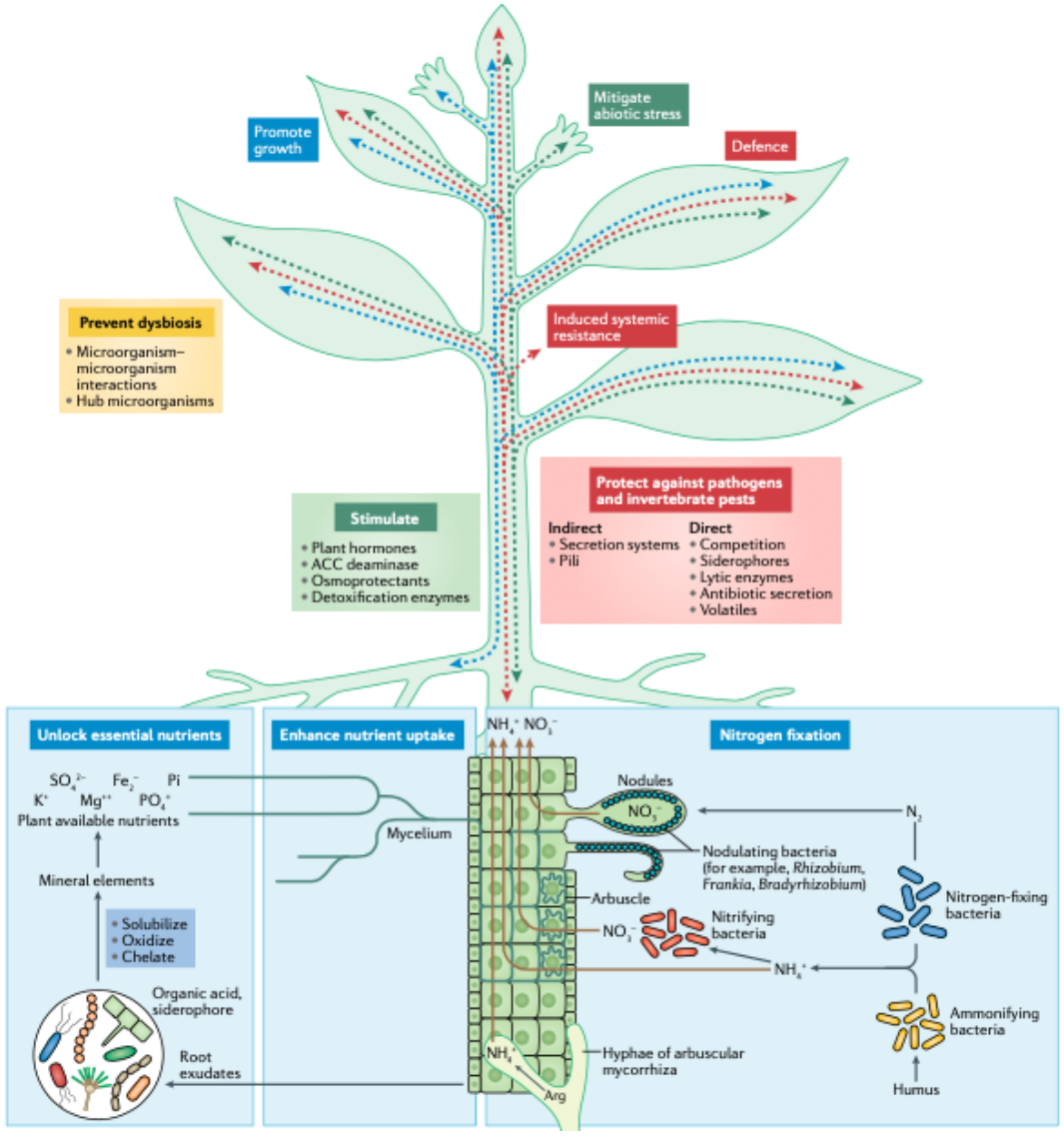


The plant-associated microbiome can provide benefits to the plant through various direct or indirect mechanisms

- nutrient acquisition (blue)
- stress control (green)
- defence against pathogens and pests (red)

Nutrient acquisition

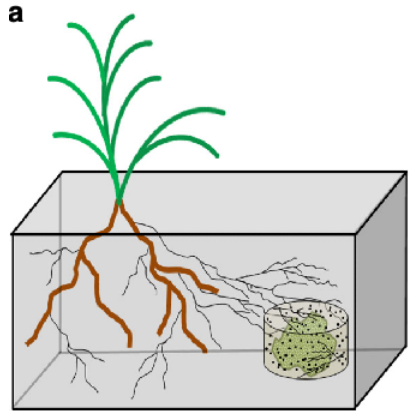
Functions of plant-associated microbiomes

Experimental design

- The experimental design allowed to assess the individual and combined contributions of AM fungi and the rest of the soil microbial community to plant N acquisition from organic matter
- The 6 mesocosm treatments included

Plot	Fungi	soil inocula	soil fertilization
control	⊖	⊖	none
microbes (N0)	⊖	⊕	0 kg N / ha per year
AM fungi	⊕	⊖	none
AM fungi + microbes (N196)	⊕	⊕	196 kg N / ha per year
AM fungi + microbes (N28)	⊕	⊕	28 kg N / ha per year
AM fungi + microbes (N0)	⊕	⊕	0 kg N / ha per year

Mesocosm design



- Terrestrial ecosystems experience substantial N enrichment due to atmospheric deposition and fertilizer applications
- Long-term N enrichment of grassland soils results in substantial changes in microbial community structure and functional gene representation
- The particular mechanisms through which long-term N enrichment influences plant-biotic interactions and plant productivity are not fully

Questions