In situ relationships between microbiota and potential pathobiota in Arabidopsis thaliana.

Titre	In situ relationships between microbiota and potential pathobiota in Arabidopsis thaliana.
Type de publication	Article de revue
Auteur	Bartoli, Claudia [1], Frachon, Léa [2], Barret, Matthieu [3], Rigal, Mylène [4], Huard-Chauveau, Carine [5], Mayjonade, Baptiste [6], Zanchetta, Catherine [7], Bouchez, Olivier [8], Roby, Dominique [9], Carrère, Sebastien [10], Roux, Fabrice [11]
Editeur	Springer Nature Publishing
Type	Article scientifique dans une revue à comité de lecture
Année	2018
Langue	Anglais
Date	2018 08
Pagination	2024-2038
Volume	12
Titre de la revue	ISME Journal
ISSN	1751-7370
Mots-clés	Arabidopsis [12], Bacteria [13], France [14], Microbiota [15], Plant Diseases [16], Plant Leaves [17], Plant Roots [18]
Résumé en anglais	A current challenge in microbial pathogenesis is to identify biological control agents that may prevent and/or limit host invasion by microbial pathogens. In natura, hosts are often infected by multiple pathogens. However, most of the current studies have been performed under laboratory controlled conditions and by taking into account the interaction between a single commensal species and a single pathogenic species. The next step is therefore to explore the relationships between host-microbial communities (microbiota) and microbial members with potential pathogenic behavior (pathobiota) in a realistic ecological context. In the present study, we investigated such relationships within root-associated and leaf-associated bacterial communities of 163 ecologically contrasted Arabidopsis thaliana populations sampled across two seasons in southwest of France. In agreement with the theory of the invasion paradox, we observed a significant humped-back relationship between microbiota and pathobiota α-diversity that was robust between both seasons and plant organs. In most populations, we also observed a strong dynamics of microbiota composition between seasons. Accordingly, the potential pathobiota composition was explained by combinations of season-specific microbiota operational taxonomic units. This result suggests that the potential biomarkers controlling pathogen's invasion are highly dynamic.
URL de la notice	http://okina.univ-angers.fr/publications/ua19710 [19]
DOI	10.1038/s41396-018-0152-7 [20]
Lien vers le document	https://www.nature.com/articles/s41396-018-0152-7 [21]

Titre abrégé	ISME J
Identifiant (ID) PubMed	29849170 [22]

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[22] http://www.ncbi.nlm.nih.gov/pubmed/29849170?dopt=Abstract