



## Adhesion Mechanisms of Plant-Pathogenic Xanthomonadaceae

Submitted by Emmanuel Lemoine on Thu, 02/12/2015 - 13:04

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| Titre                 | Adhesion Mechanisms of Plant-Pathogenic Xanthomonadaceae                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Auteur                | Mhedbi-Hajri, Nadia [1], Jacques, Marie-Agnès [2], Koebnik, Ralf [3]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Titre de la revue     | Bacterial Adhesion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mots-clés             | Biological Techniques [6], Biomedicine general [7], Biophysics and Biological Physics [8], Medical Microbiology [9], Microbiology [10], Protein Structure [11]<br>The family Xanthomonadaceae is a wide-spread family of bacteria belonging to the gamma subdivision of the Gram-negative proteobacteria, including the two plant-pathogenic genera Xanthomonas and Xylella, and the related genus Stenotrophomonas. Adhesion is a widely conserved virulence mechanism among Gram-negative bacteria, no matter whether they are human, animal or plant pathogens, since attachment to the host tissue is one of the key early steps of the bacterial infection process. Bacterial attachment to surfaces is mediated by surface structures that are anchored in the bacterial outer membrane and cover a broad group of fimbrial and non-fimbrial structures, commonly known as adhesins. In this chapter, we discuss recent findings on candidate adhesins of plant-pathogenic Xanthomonadaceae, including polysaccharidic (lipopolysaccharides, exopolysaccharides) and proteineous structures (chaperone/usher pili, type IV pili, autotransporters, two-partner-secreted and other outer membrane adhesins), their involvement in the formation of biofilms and their mode of regulation via quorum sensing. We then compare the arsenals of adhesins among different Xanthomonas strains and evaluate their mode of selection. Finally, we summarize the sparse knowledge on specific adhesin receptors in plants and the possible role of RGD motifs in binding to integrin-like plant molecules. |
| Résumé en anglais     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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