An update on Pseudomonas aeruginosa biofilm formation, tolerance, and dispersal - DTU Orbit (18/02/2019)

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We review the recent advances in the understanding of the Pseudomonas aeruginosa biofilm lifestyle from studies using in vitro laboratory setups such as flow chambers and microtiter trays. Recent work sheds light on the role of nutrients, motility, and quorum sensing in structure formation in P. aeruginosa biofilms. The second messenger, c-di-GMP, is established as an important regulator of the synthesis of polysaccharide and protein components of the biofilm matrix. Extracellular DNA is shown to be an essential component of the biofilm matrix. It has become apparent that biofilm formation involves interactions between different subpopulations. The molecular mechanisms underlying the tolerance of biofilm bacteria to antimicrobial agents are beginning to be unraveled, and new knowledge has been obtained regarding the environmental cues and regulatory mechanisms involved in biofilm dispersal.

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