



Tipo	Periódico
Título	<i>Klebsiella pneumoniae</i> Biofilms and Their Role in Disease Pathogenesis
Autores	Guerra, MES.; Vieira, B; Destro, G.; Lima, AS; Ferraz, LFC; Hakansson, AP; Darrieux, M; Converso, TR.
Autor (es) USF	Guerra, MES.; Vieira, B; Destro, G.; Lima, AS; Ferraz, LFC; Darrieux, M; Converso, TR.
Autores Internacionais	Hakansson, AP
Programa/Curso (s)	Programa de Pós-Graduação Stricto Sensu em Ciências da Saúde
DOI	10.3389/fcimb.2022.877995
Assunto (palavras chaves)	biofilm, <i>Klebsiella pneumoniae</i> , quorum sensing, pathogenesis, virulence factors
Idioma	Inglês
Fonte	Título do periódico: <i>Frontiers in Cellular and Infection Microbiology</i> ISSN: 2235-2988 Volume/Número/Paginação/Ano: 12/877995/1-12/2022
Data da publicação	05/2022
Formato da produção	Digital https://doi.org/10.3389/fcimb.2022.877995
Resumo	The ability to form biofilms is a crucial virulence trait for several microorganisms, including <i>Klebsiella pneumoniae</i> – a Gram-negative encapsulated bacterium often associated with nosocomial infections. It is estimated that 65-80% of bacterial infections are biofilm related. Biofilms are complex bacterial communities composed of one or more species encased in an extracellular matrix made of proteins, carbohydrates and genetic material derived from the bacteria themselves as well as from the host. Bacteria in the biofilm are shielded from immune responses and antibiotics. The present review discusses the characteristics of <i>K. pneumoniae</i> biofilms, factors affecting biofilm development, and their contribution to infections. We also explore different model systems designed to study biofilm formation in this species. A great number of factors contribute to biofilm establishment and maintenance in <i>K. pneumoniae</i> , which highlights the importance of this mechanism for the bacterial fitness. Some of these molecules could be used in future vaccines against this bacterium. However, there is still a lack of in vivo models to evaluate the contribution of biofilm development to disease pathogenesis. With that in mind, the combination of different methodologies has great potential to provide a more detailed scenario that more accurately reflects the steps and progression of natural infection.
Fomento	FAPESP: 2019/23566-6 e 2021/01211-1. Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq): 400099/2022-5. Swedish Research Council (VR) grant number: 2021-06050. Casa Nossa Senhora da Paz