Biofilm formation as a function of adhesin, growth medium, substratum and strain type.

Biofilm formation is involved in the majority of bacterial infections. Comparing six Escherichia coli and Klebsiella pneumoniae isolates revealed significant differences in biofilm formation depending on the growth medium. Fimbriae are known to be involved in biofilm formation, and type 1, F1C and P fimbriae were seen to influence biofilm formation significantly different depending on strain background, growth media and aeration as well as surface material. Altogether, this report clearly demonstrates that biofilm formation of a given strain is highly dependent on experimental design and that specific mechanisms involved in biofilm formation such as fimbrial expression only play a role under certain environmental conditions. This study underscores the importance of careful selection of experimental conditions when investigating bacterial biofilm formation and to take great precaution/care when comparing results from different biofilm studies.

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