The objective of ESGB...

...is to promote and disseminate studies and knowledge about methods and results of biofilm studies with relevance for infections in humans. The ultimate goal is to improve diagnostics and the results of prophylaxis and therapy of biofilm infections in humans.

An introduction to biofilms

In general, bacteria have two life forms during growth and proliferation. In one form, the bacteria exist as single, independent cells (planktonic) whereas in the other form, bacteria are organized into sessile aggregates. The latter form is commonly referred to as the biofilm growth phenotype.

Biofilm structures

The biofilm mode of growth allows survival of microorganisms in the hostile environment. The biofilm consists of microcolonies encapsulated by exopolysaccharide (EPS) produced by the bacteria or the host.

Biofilm infections

The majority (an estimated 60-85%) of bacterial and fungal infections in hospitals are biofilm-related. Important hallmarks of these biofilm infections are reduced susceptibility to antibiotics and disinfectants, and the ability to evade the host defences. This explains the chronic nature of many biofilm-related infections.

Treatment of biofilm-related infections

Biofilms evade antimicrobial challenges by multiple mechanisms and cells in biofilms are much more tolerant to antibiotic treatment than planktonic cells. Antibiotic doses which kill suspended cells, for example, need to be increased as much as 1,000 times to kill biofilm cells in vitro. As a consequence, antibiotic treatments often fail to eradicate all bacteria from a biofilm.

ESGB biofilm guidelines

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