

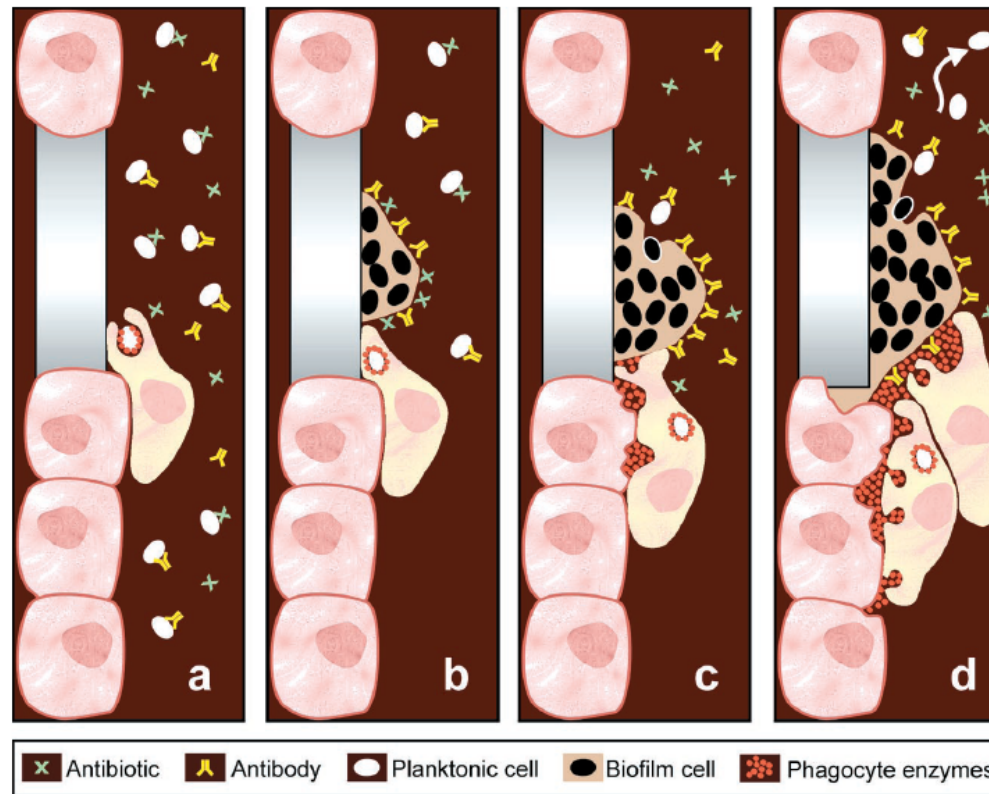
Project suggestion:

Fighting bacterial biofilm infections

A microbiological and spectroscopic project in collaboration with DTU Fotonik

The formation of persistent bacterial biofilms on transplants and catheters is a great medical problem. Senior Researcher *Jimmy Bak* from DTU Fotonik (RISØ) is developing a method to sterilization of catheters, etc., by using UV radiation, and he suggests a project aiming at a basic quantization of the results.

Fig. 1. Diagram of a medical biofilm. (A) Planktonic bacteria can be cleared by antibodies and phagocytes, and are susceptible to antibiotics. (B) Adherent bacterial cells form biofilms preferentially on inert surfaces, and these sessile communities are resistant to antibodies, phagocytes, and antibiotics. (C) Phagocytes are attracted to the biofilms. Phagocytosis is frustrated but phagocytic enzymes are released. (D) Phagocytic enzymes damage tissue around the biofilm, and planktonic bacteria are released from the biofilm. Release may cause dissemination and acute infection in neighboring tissue.



Costerton *et al.*, "Bacterial Biofilms: A Common Cause of persistent Infections", *Science* **284**, 1318 (1999)

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