



“Venous access catheters used in clinics are prone to biofilm contamination, contributing to chronic and nosocomial infections” Chauhan et al (2016).

Abstract:

Venous access catheters used in clinics are prone to biofilm contamination, contributing to chronic and nosocomial infections. Although several animal models for studying device-associated biofilms were previously described, only a few detailed protocols are currently available.

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Here we provide a protocol using totally implantable venous access ports (TIVAPs) implanted in rats. This model recapitulates all phenomena observed in the clinic, and it allows bacterial biofilm development and physiology to be studied. After TIVAP implantation and inoculation with luminescent pathogens, in vivo biofilm formation can be monitored in situ, and biofilm biomass can be recovered from contaminated TIVAP and organs. We used this protocol to study host responses to biofilm infection, to evaluate preventive and curative antibiofilm strategies and to study fundamental biofilm properties. For this procedure, one should expect ~3 h of hands-on time, including the implantation in one rat followed by in situ luminescence

monitoring and bacterial load estimation.

Reference:

Chauhan, A., Ghigo, J.M. and Beloin, C. (2016) Study of in vivo catheter biofilm infections using pediatric central venous catheter implanted in rat. Nature Protocols. 11(3), p.525-41.

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