

Sarbani Mohan (née Sarkar)

Complement escape mechanisms of *Streptococcus pneumoniae*

My project aims on complement escape strategies used by the human pathogenic bacteria *Streptococcus pneumoniae*. Upon infection *S.pneumoniae* similar to other pathogenic microbes is constantly challenged by the complement defense system of the human host. The complement system as a part of the innate immune system forms a human line of defence that recognizes and damages infectious microbes. Complement is activated by three pathways: the alternative, the classical and the lectin pathway. Pathogenic microbes have developed diverse mechanisms to evade host complement system.

Streptococcus pneumoniae is a facultative human pathogen that can cause pneumonia, acute sinusitis, otitis media, bacteraemia and meningitis. *S. pneumoniae* binds the human plasma protein Factor H, which is the central inhibitor of the alternative complement pathway. Factor H bound to the bacterial surface protects the pathogen from the damaging effects of the complement cascade. My project deals with identifying complement escape strategies used by *S. pneumoniae*. Particularly, I want to identify and characterise bacterial proteins that bind host complement inhibitors. I aim to study interactions of streptococcal surface proteins with regulators of the complement and coagulation cascades.

Supervisor

[Peter F. Zipfel](#)

Co-Supervisors

[Gabriele Diekert](#)

Start of PhD

January 1, 2011

Doctoral Disputation

March 19, 2014

