

Poster Presentation

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Studies of the Type IV Pilus of Neisseria meningitidis

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Neisseria meningitidis is largely a commensal species, resident specifically in the human nasopharynx but can also cause endemic and epidemic disease. Type IV pili of *N. meningitidis* have long been implicated as important colonisation and virulence factors that initiate attachment to host cells. The major pilin subunit, of which thousands of copies make the pilus shaft, is thought to be important in contributing to the adhesive properties of the type IV pilus and has potential as a vaccine candidate against *N. meningitidis*. To further understand the major pilins role and potential therapeutic properties, a protocol to make soluble PilE, the major pilin of *N. meningitidis*, from a variety of strains was established; and the structure of PilE from strain MC58 was solved by X-ray crystallography. The structure of PilE was solved to 1.4Å resolution revealing a classic pilin fold indicating the pilus may have a similar super-structure to that of the closely related *Neisseria gonorrhoeae*. Immunisations were carried out in mice with the pilins from different strains of *N. meningitidis*. Preliminary results indicate the sera generated have no bactericidal activity but can discriminate between the two classes of major pilins. Future work aims to further investigate the properties of this sera and attempt structure solution of major pilins from different strains of *N. meningitidis*.

Keywords: *Neisseria meningitidis*, Bacterial Adhesion, Type IV Pili