



School of Pharmacy PhD Projects 2014

Project Title The role of MRSA in Cystic Fibrosis (CF) lung infection

Supervisors Dr Deirdre Gilpin, Dr Michael Tunney and Professor Stuart Elborn

Description *Staphylococcus aureus* is among the earliest pathogens cultured from the respiratory tract of CF patients. Increased rates of Meticillin resistant *Staphylococcus aureus* (MRSA) have been observed in recent years among CF patients, and analysis of registry data has shown an association with declining lung function and increased mortality. However, it is unclear whether MRSA in CF is a marker or a cause of more severe disease.

This study, in collaboration with Dr Marianne Muhlebach at University of North Carolina at Chapel Hill, will compare virulence factor production in MRSA sequentially isolated from CF patients in Belfast and in UNC. Phenotypic and molecular studies will be employed to determine biofilm formation, toxin production, antibiotic resistance profiles, and other key factors associated with increased virulence and/or persistence of MRSA within the CF lung over time, and how this may relate to clinical outcomes.

This 3 year project will provide extensive training in conventional microbiology, transcriptomic analysis, tissue culture and molecular microbiology techniques within a clinically focused internationally renowned research team.

Start Date 1 October 2014

Keywords MRSA, Cystic Fibrosis, virulence, biofilm, molecular microbiology

Contact Details

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How to Apply

Postgraduate applications should be made using Queen's Online:

<http://go.qub.ac.uk/pgapply>

Please note that there are two application processes: one for admission to the university and another for postgraduate awards.

Further Information

Additional information for prospective postgraduate students can be found on the School of Pharmacy website:

<http://www.qub.ac.uk/pha>

and the Queen's Postgraduate website:

<http://www.qub.ac.uk/home/ProspectiveStudents/PostgraduateStudents/>