



School of Pharmacy PhD Projects 2015/16

Project Title Effect of antibiotic treatment on airway microbial community composition in patients with bronchiectasis

Supervisors Prof Michael Tunney, Dr Deirdre Gilpin, Prof Stuart Elborn (Centre for Infection & Immunity, School of Medicine, Dentistry and Biomedical Sciences)

Description Individuals with bronchiectasis have chronic cough, sputum production and frequent respiratory infections which lead to impaired lung function and health-related quality of life. There is a direct relationship between bacterial load, airway inflammation and risk of exacerbation supporting the use of long-term inhaled antibiotics in this patient cohort. However, it is not clear what effect long-term antibiotic treatment has on microbial community composition and how this relates to improved patient outcomes. This study will comprehensively define lung microbiota composition in patients with bronchiectasis, prior to commencing and whilst receiving inhaled antibiotic treatment and relate this to clinical parameters and markers of disease status. Comprehensive molecular characterization of the airway microbiome will be performed using next generation Illumina sequencing. Changes in the abundance of genes encoding antimicrobial resistance in response to antibiotic treatment will also be determined. This 3-year project will provide extensive training in conventional aerobic/anaerobic culture methods, molecular microbiology and inflammatory marker measurement as part of an internationally renowned research team.

Further information can be obtained from Prof. M. Tunney: m.tunney@qub.ac.uk

Start Date September 2015

Keywords Bronchiectasis, inhaled antibiotic, infection, inflammation, next-generation sequencing, microbiome

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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/>

