



School of Pharmacy PhD Projects 2014

Project Title	Effect of Ivacaftor on airway microbial community composition in patients with Cystic Fibrosis
Supervisors	Dr Michael Tunney, Dr Deirdre Gilpin, Prof S Elborn (Centre for Infection & Immunity)
Description	<p>Cystic Fibrosis (CF) is a common life-threatening disease affecting >10,000 children and young adults in the UK. Ivacaftor, a cystic fibrosis transmembrane conductance regulator (CFTR) potentiator, targeting the underlying cause of CF, offers a novel approach to treatment and has been shown to improve respiratory function and lower the risk of pulmonary exacerbations. However, it is not clear what effect Ivacaftor has on microbial community composition and how this relates to improved patient outcomes.</p> <p>This study will comprehensively define lung microbiota composition in CF patients prior to commencing and whilst receiving Ivacaftor treatment and relate this to clinical parameters and markers of disease status. Samples already collected from patients will be processed using strict anaerobic culture and bacterial load quantified. Comprehensive molecular characterization of the complete airway microbiome will be performed using next generation Illumina sequencing. The relationship between the composition of the airway microbiome, lung function and measures of inflammation will then be determined. This 3-year project will provide extensive training in conventional aerobic and anaerobic culture methods, molecular microbiology, inflammatory marker measurement and protein biochemistry as part of an internationally renowned research team.</p>
Start Date	September 2014
Keywords	Cystic Fibrosis, Ivacaftor, infection, inflammation, next-generation sequencing, antimicrobial

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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/>