



School of Pharmacy PhD Projects 2014

Project Title Antibiotic Biodiscovery from Extreme Halophiles

Supervisors Dr Brendan Gilmore, Prof Sean Gorman

Description The overall *aim* of this research project is to identify strains of extremely halophilic bacteria and archaea exhibiting antimicrobial activity against a group of clinically relevant bacteria, known as the ESKAPE pathogens. The *objectives* are to isolate and identify bacteria from samples of Triassic halite from Kilroot Saltmine, Carrickfergus. These extremely halophilic bacteria will be assessed for their ability to grow as biofilms, the effect of biofilm mode of growth on antimicrobial tolerance evaluated and finally their ability to produce bioactive compounds will be assessed using solvent extraction and activity guided fractionation protocols, in an attempt to identify both proteinaceous and novel small molecule antibiotic compounds. In particular protocols for the isolation of novel actinomycetes from ancient halites will be devised to facilitate screening of this exciting class of bacteria for antibiotic discovery. This project will identify novel antimicrobials and elucidate mechanisms of biofilm formation in extreme halophilic bacteria and archaea, which are, as yet, poorly understood.

The student will join a dynamic antimicrobial biodiscovery consortium and obtain skills in extremophile microbiology, antibiotic isolation and identification, pharmaceutical analysis, proteomics and molecular microbiology.

Start Date October 2014

Keywords Antibiotic, biodiscovery, biofilm, antimicrobial resistance

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/>