

Research Assistant/Associate in Cystic Fibrosis (CF) Drug Development Biosciences Institute Faculty of Medical Sciences

The role

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This post is funded by a CF Trust (UK) Strategic Research Centre (SRC) award:
<https://www.cysticfibrosis.org.uk/news/cystic-fibrosis-trust-pledge-over-ps2m-to-address-research-priorities-of-people-with-cf>.

You will carry out cutting-edge discovery research at the crossroads between basic and translational research. The supervisory and wider collaborative teams encompass cross-disciplinary expertise from the host institution at Newcastle University and three other major EU research centres based in Utrecht, Lisbon and Genoa.

During this project you will:

- Gain valuable experience in the production of fully differentiated primary human airway models derived from people with CF.
- Use these CF airway models for pre-clinical testing of novel PTC acting chemicals using highly relevant functional techniques.
- Gain expertise in a wide range of *in vitro* cell physiological, molecular, and biochemical techniques.
- Be part of an international consortium of researchers dedicated to the project.

This position also offers the opportunity to gain valuable additional research experience through a lab visit to Prof Rob Taran's group based at Kansas University Medical School (USA) for up to a month. Here they will learn how to make dynamic measurements of airway mucus rheology by microscopy.

You will be integrated into the research team of Dr Michael Gray (Biosciences Institute, grant coordinator) and Clinical teams of Dr Malcolm Brodlie and Dr Iram Haq (Translational & Clinical Research Institute).

Title of Project

PTSuppress: Novel lead compounds as potential suppressor drugs for CFTR PTC mutations

There are no available therapies for the ~8.4% of CFTR gene variants which introduce Premature Termination Codons (PTCs), leading to: 1) a truncated, non-functional, CFTR protein; and 2) a significant reduction in mRNA levels via Nonsense-Mediated Decay (NMD). Despite ongoing efforts, there is an unmet need for the fast discovery of novel strategies to rescue PTCs. We have identified 10 lead compounds that provide PTC correction by PTC

readthrough, NMD inhibition, or both. Through an integrated programme of medicinal chemistry and further screening, **PTSuppress** will optimise these lead compounds and repurpose already approved drugs. Ultimately, we will validate the best compounds/drugs/combinations (also with known CFTR modulators) in patient-derived epithelial models with different PTC variants to maximise efficacy for synergy amongst the best compounds/combinations for further development.

The final objective of PTPressure is to identify novel compound(s) of high therapeutic potential as future drug(s) for the benefit of pwCF bearing PTCs.

Application details:

<https://performancemanager.successfactors.eu/sf/jobreq?jobId=28428&company=newcastle>
[eu](https://performancemanager.successfactors.eu/sf/jobreq?jobId=28428&company=newcastle)

<https://jobs.ncl.ac.uk/job-invite/28428/>

Find out more about the Faculty of Medical Sciences here: <https://www.ncl.ac.uk/medical-sciences/>

Find out more about our Research Institutes here:
<https://www.ncl.ac.uk/medical-sciences/research/institutes/>

As part of our commitment to career development for research colleagues, the University has developed 3 levels of [research role profiles](#). These profiles set out firstly the generic competences and responsibilities expected of role holders at each level and secondly the general qualifications and experiences needed for entry at a particular level.

Also include information about the Academic Service/Unit they will be working in covering strategic aims, values and culture.

Key Accountabilities

- Although working under the general guidance of an academic or Principal Investigator, the postholder will contribute ideas, including enhancements to the technical or methodological aspects of their studies, thus providing substantial 'added value'
- Develop and carry out the specified project using appropriate techniques and equipment as outlined in the personal requirements
- Determine appropriate methodologies for research, with advice and support where required
- Contribute to grant applications submitted by others and in time develop own research objectives and proposals for funding
- Begin to write, with appropriate support, proposals for individual research funding or, where funders do not permit this, contribute to the writing of collective bids
- Assess research findings for the need/scope for further investigations

- Contribute to the writing up of their research for publication and dissemination, either through seminar and conference presentations or through publications
- Present research findings, either at conferences or through publications in reputable outlets appropriate to the discipline
- May be involved in the supervision, with guidance, of final year undergraduate research projects and in providing support to postgraduate research students or Research Assistants
- Will need to work with the support staff and, on occasions, with undergraduate and postgraduate students, and interact intellectually with other academic members of the Institute.
- May contribute to events celebrating the public engagement of science/social sciences/humanities
- Develop an awareness of University structures, policies and procedures and relevant issues in the higher education, research, social and political environment

The Person

Knowledge, Skills and Experience

Essential:

- Ability to work well as part of a team and rapidly acquire new skills
- Detailed subject knowledge (human physiology, epithelia, membrane transport, electrophysiology) in the area of research
- Likelihood of advanced skills directly related to the research projects
- High level of analytical and problem-solving capability
- Ability to communicate complex information with clarity and to encourage the commitment of others
- Experience of research with clear transferable skills and some experience or awareness of the research environment
- Presentations at conferences and/or high-quality publications

Desirable:

- Research experience in cystic fibrosis or other respiratory diseases
- Experience in growing fully differentiated primary airway cells
- Experience in electrophysiological techniques
- Experience in molecular/biochemical techniques involving membrane transport proteins

Attributes and Behaviour

Essential:

- Highly motivated
- Good communication and presentation skills

Desirable:

- Published work
- Oral /poster presentations at international conferences

Qualifications

Essential:

- Honours Science degree with some subject knowledge in the relevant area (Human physiology, epithelial tissues, membrane transport, genetic diseases) (Assistant Level)
- A PhD in the research area required (Physiology/Pharmacology/Membrane Transport) (Associate Level)