Postdoctoral Research Fellow - Neuroscience

Role Description

GRADE

Grade 5

LOCATION

Sighthill, Edinburgh

LINE MANAGER

Dr Fiona Kerr

Role Summary

The post-holder will make a substantial contribution to the project 'Glial homeostasis, brain ageing and neurodegeneration' working with Dr Fiona Kerr within the Centre for Biomedicine and Global Health at ENU. Dr Kerr uses human neuron and astrocyte models to establish the molecular basis of neurodegeneration in Alzheimer's disease, with a view to identifying novel targets for disease prevention and treatment. This position is supported by a larger MRC-funded grant that will support 3 post-doctoral research fellows for 36 months: this specific post at ENU working with astrocyte models, one at UCL working with Dr Dervis Salih (human microglia models) and one at the University of Glasgow working with Dr Nathan Woodling (Woodling lab; *Drosophila* models). The overarching goal of the project is to systematically characterise the glial-specific functions of newly identified longevity-associated genes (recently published by the Salih lab) in models of ageing and Alzheimer's disease-associated toxicity, and thus to identify which of these genes are most promising for future therapeutic targeting in neurodegenerative diseases. The successful candidate will be responsible for planning, execution and report of experiments and contributing to the formulation and submission of research publications as well as management and direction of this challenging project as opportunities allow.

The successful candidate will use siRNA technology to knockdown these candidate genes in human primary astrocytes, prior to using cell biology, molecular biology, biochemistry, microscopy, genomic and bioinformatic techniques to dissect their mode of action in human astrocyte-neuron cross-
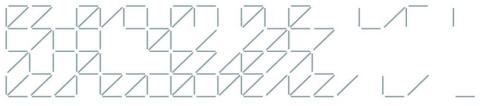
talk. This will be studied in response to ageing-related neuroinflammation and Alzheimer's disease-associated toxicity, thus identifying promising future therapeutic targets for ageing-related neurodegenerative diseases.

Line Management Responsibility for:
This role does not have any line management responsibilities currently.

Main Duties and Responsibilities

- To lead the design and performing of experimental work, and bioinformatic analyses, individually or jointly in accordance with the deliverables outlined in the project award.
- Take a leading role in liaising with technical staff, as well as postdoctoral researchers and Principal Investigators across collaborating institutions (in particular project co-leads Dr Nathan Woodling and Dr Dervis Salih), to ensure continuity of experimental design and target identification.
- Document research outputs including analysis and interpretation of all data, maintaining records and databases, drafting technical/progress reports and papers as appropriate.
- Survey the research literature and environment, understand the research challenges associated with the project & subject area, & develop/implement a suitable research strategy.
- Keep up to date with current knowledge and recent advances in the field/discipline.
- Manage day to day resources of the project (e.g. laboratory consumables) and assist in the supervision and training of other researchers in the laboratory, including Postgraduate Research Students as required.
- Presentation of work at international and national conferences, and at internal and external research progress meetings, to develop and enhance our research profile.
- Publication of experimental findings in peer-reviewed scientific literature.
- Engage in personal, professional and career development, to enhance both specialist and transferable skills in accordance with desired career trajectory.
- To carry out other relevant duties as agreed with the Principal Investigator.
- Role model the University's values & behaviours.
- Be responsible for ensuring that the information and records processed (received, created, used, stored, destroyed) on behalf of the University are managed in compliance with ALL applicable legislation, codes and policies e.g. Data Protection, Information Security and Records Management.

PERSON SPECIFICATION

	ESSENTIAL	DESIRABLE

Education / Qualifications

	ESSENTIAL	DESIRABLE
• PhD in relevant biomedical/molecular biology field	✔	
• Knowledge of neurodegeneration/neuroinflammation/ageing		✔

Skills / Experience

	ESSENTIAL	DESIRABLE
• Sufficient depth of relevant research experience appropriate to an early career researcher, including experience of undertaking independent research	✔	
• Excellent organisational, time and project management skills	✔	
• Extensive experience in mammalian cell culture, including primary cells	✔	
• Extensive experience of molecular biology/biochemical (eg qPCR, WB, ELISA) and imaging (confocal) techniques	✔	
• A comprehensive and up-to-date knowledge of current issues and future directions within the fields of ageing and/or neurodegenerative disease research	✔	
• Excellent communication skills (oral and written) and ability to communicate complex data/concepts clearly, including experience of conference presentations and publication of research in quality journals	✔	
• Excellent interpersonal skills including team working, a collegiate and co-operative approach within a multidisciplinary group, and where relevant to the post, supervisory skills	✔	
• IT and data analysis/interpretation skills as appropriate.	✔	
• Commitment to open research, as appropriate to the discipline, through open data, open code, open educational resources and practices that support replication.	✔	
• Proven commitment to supporting the career development of colleagues and to other forms of collegiality appropriate to the career stage.	✔	

• Postdoctoral experience in ageing or neurodegeneration research	✔
• Research experience of analysis of complex datasets including transcriptomic, proteomic and other 'omics' approaches preferably with R and/or python.	✔
• Research experience in genetic screens and/or other medium- to high-throughput strategies for identifying novel molecular targets in biological systems.	✔
• Knowledge of glial cell biology and neuroinflammatory signalling networks, particularly within the contexts of ageing and/or neurodegenerative diseases	✔