



Job title	Research Associate/Fellow	Job family and level	Research and Teaching Level 4 (Career Training Grade)
School/ Department	Life Sciences	Location	QMC, Medical School

Purpose of role

This is a 8-month project funded by The Medical Research Foundation at the interface of cancer biology and neuronal function investigating how cancer and cancer chemotherapy impacts on sensitisation and pain. As part of a multidisciplinary team based in Nottingham, this Post-Doctoral Research Associate will support the project entitled “Extracellular vesicles as conduits for the transfer of biologically active compounds which mediate cancer chemotherapy based pain in early life”. The scientist appointed to this role will undertake laboratory-based research to identify and characterise the cargo of extracellular vesicles (EV) derived from chemotherapy treated medulloblastoma (the most common malignant brain tumour in childhood) cell lines, investigate how these alter the functional properties of sensory neurons and determine their biodistribution and impact on pain behaviours in laboratory rodents. Pain is the primary side-effect of cancer chemotherapy and not only impacts patients undergoing treatment but also significantly impacts cancer survivors leading to long-lasting, deleterious effects on mental and physical health as well as engagement with wider society. This is especially true when cancer occurs in childhood where chemotherapy induced pain can lead to alterations in the development and maturation of both peripheral and central nervous systems, which can result in long-term changes in neuronal function and pain processing.

This is a truly innovative and ground-breaking collaborative project between the PI Prof Gareth Hathway (School of Life Sciences), and the Co-Is Dr Federico Dajas-Bailador (School of Life Sciences), Prof Beth Coyle (School of Medicine), and Prof Vicky James (School of Veterinary Medicine). The research team comprise expertise in childhood pain, molecular and cellular neuroscience, cancer biology, extracellular vesicle biology and in vivo modelling. The project itself will combine expertise in neuroscience and cancer biology and has the potential to lead to findings which can be rapidly translated into patient benefit.

The post holder will be expected to undertake independent research as well as working as part of a multidisciplinary team that will employ experimental approaches, techniques and methodologies appropriate to the type of research needed at each stage of the project. The postdoctoral researcher will also be responsible for writing up and presenting their work in order to contribute to scientific meetings and published outcomes. The candidate should enjoy teamwork and should have excellent communication skills as well as the ability to work across different areas of the biomedical sciences.

For more information or an informal discussion please contact Prof Gareth Hathway (gareth.hathway@nottingham.ac.uk)

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	To plan and conduct research using established approaches, methodologies and techniques within the research area and support the development of research objectives and proposals for own and/or collaborative research area.	30
2	To analyse and interpret data, evaluate and criticise texts and bring new insights to research area.	20
3	To contribute to writing up research findings for conferences and publication.	15
4	To assist with the preparation of applications to both external and/or internal bodies for funding.	10
5	To build internal and/or external contacts with academic and industry colleagues to develop knowledge and understanding, forming relationships for future collaborations.	15
6	To co-ordinate the operational aspect of research, for example, arranging meetings and contribute to collaborative decision making with colleagues in area of research.	5
7	To provide guidance as required to support staff and students, where appropriate in own area of expertise.	5

Knowledge, Skills, Qualifications & Experience

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	Essential	Desirable
Qualifications/ Education	<ul style="list-style-type: none"> BSc or equivalent in a relevant discipline. PhD (submitted) 	
Skills/Training	<ul style="list-style-type: none"> Well developed technical and methodological skills in the subject area. <u>Evidence</u> of the capacity to write high quality reports and peer-reviewed papers for publication; and of the capacity to present work effectively to a variety of professional and academic audiences at meetings and conferences. <u>Evidence</u> of ability to take a leading role in the development and execution of research projects. 	<ul style="list-style-type: none"> Experience in pain research, neuroscience or cancer biology Experience of neuronal primary cultures. Excellent molecular cell biology skills (RNA extraction, qPCR, cloning and protein expression).

	<ul style="list-style-type: none"> • Innovative thinker with high level of analytical skills. • The ability to assess and evaluate concepts/theories to develop original solutions and particular knowledge of, and expertise in, research methodologies appropriate to their area of scholarship. • Excellent problem-solving abilities. • Ability to communicate complex information clearly at all levels. • Good organisational skills contributing to the planning and organising of the research programme and/or specific research project. 	<ul style="list-style-type: none"> • Experience of in vivo models and behavioural testing in rodents • Experience in fluorescent microscopy techniques for the detection of Ca^{2+} dynamics in neuronal models. • Experience of work with RNA molecular tools in cellular models. • Experience in the extraction of RNA from cellular and tissue samples. • Experience in isolation and analyses of extracellular vesicles
Experience	<ul style="list-style-type: none"> • In-depth subject knowledge in their areas of scholarship. Specifically, evidence of substantial experience in the field of pain and/or sensory neuroscience and/or cancer biology and/or extracellular vesicles • A published track-record (at a level commensurate with experience). • A substantial research background, of strong relevance to the aims of programme of work. • <u>Evidence</u> of good oral communication skills; flexible independent working; initiative; and the ability to work as part of a multi-disciplinary team. 	<ul style="list-style-type: none"> • Experience of the supervision of other members of staff (e.g. technicians, biomedical scientists), undergraduate and postgraduate students

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> ▪ Excellent oral and written communication skills, including the ability to communicate with clarity on complex information. ▪ Developing research skills, with the ability to creatively apply relevant research approaches, models, techniques and methods ▪ Ability to contribute to method improvement. ▪ Analytical ability to facilitate conceptual thinking, innovation and creativity. ▪ Ability to build relationships and collaborate with others, internally and externally. 	<ul style="list-style-type: none"> ▪ Ability to assess and organise resource requirements and deploy effectively. ▪ Ability to foster a research culture and commitment to learn in others. ▪ High analytical ability to analyse and illuminate data, interprets reports, evaluate and criticise texts and bring new insights.
Knowledge and experience	<ul style="list-style-type: none"> ▪ Evidence of sufficient breadth or depth of research methodologies and techniques to work in research area. ▪ Some practical experience of applying the specialist skills approaches and techniques required for the role. ▪ Evidence of using research methodologies and techniques to work within research area 	<ul style="list-style-type: none"> ▪ Experience of developing new approaches, models, techniques or methods in research area.
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> ▪ PhD or equivalent in relevant subject area.(awarded or submitted) 	
Statutory, legal or special requirements		



The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.



The University is a signatory of the Declaration on Research Assessment (DORA). As such we commit to focus on the scientific content of publications (where requested or provided as part of the recruitment and selection process) as a basis for review of quality, and consideration of value and impact of research conducted, rather than any proxy measures such as Journal Impact Factor.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
Taking ownership	Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
Forward thinking	Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
Professional pride	Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
Always inclusive	Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others



