Candidate Information

Position:	Research Fellow
School/Department:	Pharmacy
Reference:	21/109452
Closing Date:	Monday 7 February 2022
Salary:	£34,304 per annum
Anticipated Interview Date:	Tuesday 22 February 2022
Duration:	Available until 1 May 2023

JOB PURPOSE:

To be an active member of the Biofunctional Nanomaterials group, led by Dr Garry Laverty, supporting the development of an enzyme-responsive peptide-mimetic hydrogel for the sustained injectable delivery of antiretroviral drugs. This post funded by Invest NI and is available for 1 year and the successful candidate must be available to start by 30th April 2022.

MAJOR DUTIES:

1. Design, synthesise and characterise peptide-mimetic hydrogelator platforms suitable for the sustained parenteral delivery of antiretroviral drugs. Such techniques will include solid and liquid-phase peptoid and peptide synthesis, conversion to different salt forms (to hydrochloride and/or acetate salts) and purification, formulation, spectroscopy (NMR, Mass spectroscopy), pharmaceutical and biological stability assays, oscillatory rheology, cell culture and drug release (HPLC).
2. Manage the day-to-day activities of the research project including commercialisation and outreach activities.
3. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
4. In consultation with supervisor, write high quality research reports and manuscripts for journal publication and presentations at international conferences.
5. Assist supervisor in the preparation of funding proposals and applications to external bodies.
6. Carry out routine administrative tasks associated with the research project to ensure that the project is completed on time and within budget in line with funder's requirements. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities, focus groups, consultancy and liaising with intellectual property development.
7. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.
8. Design, develop and refine experimental apparatus, field research or experiments in order to obtain reliable data.
9. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.

Planning and Organising:

1. Follow and refine the project plan to meet the end goals.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan in advance to meet deadlines for journal publications and to prepare presentations and papers for travelling to/attending national/international conferences and trade shows.
5. Coordinate and liaise with other members of the research group, commercialisation mentor, Research and Enterprise Queen's University Belfast and funder over work progress.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Maintain a database of research spend on the project.
3. Maintain an accurate and up-to-date experimental laboratory book relating to the project.

4. Ordering of resources, chemicals and materials for use in the project.
5. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with colleagues and students.
2. Liaise on a regular basis with supervisors, sponsors and collaborators.
3. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
4. Join external networks to share information and ideas.
5. Contribute to the School's outreach programme by establishing links with local community groups, charities, industries i.e. patient focus groups, consultancy, patenting, commercialisation activities.

ESSENTIAL CRITERIA:

1. Have or be about to obtain (evidence of submission or awaiting viva exam) a PhD in Chemistry, Chemical Engineering, Biochemistry, or closely related area.
2. At least 3 years recent relevant practical research experience of peptide-mimetic synthesis (liquid and solid-phase synthesis of peptides, peptoids, beta-peptides), advanced methods of drug conjugation, purification and identification.
3. Experience in optimising the chemical synthesis of peptide-mimetics to provide at least gram-scale yield to high (>95%) purity.
4. Experience in efficiently converting peptide/peptide-mimetic trifluoroacetate salts to acetate and/or hydrochloride salts.
5. Experience of spectroscopic (NMR, mass spectroscopy) methods relevant to peptide material characterisation.
6. Experience in drug purification and quantification by HPLC.
7. Publication record commensurate with stage of career.
8. Experience of developing research methodologies and devising models, approaches, critiques and methods.
9. Ability to communicate complex information effectively in oral and written format.
10. Ability to contribute to broader management and administrative processes.
11. Ability to contribute to administrative relevant to the research. Liaison with external collaborators and sponsors.
12. Ability to supervise work of others in research team.
13. Highly motivated with skills in managing and motivating staff.
14. Practical problem-solving skills, independence of thought and initiative are required.
15. Due to the nature of the role, flexibility of working hours and international travel will be required.

DESIRABLE CRITERIA:

1. Experience in formulating peptide-mimetic hydrogel systems.
2. Experience in oscillatory rheology.
3. Experience in tissue/cell culture techniques.
4. Experience in pharmaceutical (ICH) stability and biological (protease) stability assays.
5. Experience in neutron scattering (SANS, QENS, DOSY).
6. Experience in in vivo drug delivery and safety studies and holding a current UK Home Office personal license.