Candidate Information

Position:	Research Fellow
School/Department:	Pharmacy
Reference:	23/110919
Closing Date:	Monday 12 June 2023
Salary:	£36,333 per annum
Anticipated Interview Date:	Thursday 22 June 2023
Duration:	Fixed term for 4 months from 1 October 2023 to 31 January 2024

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.

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.

ESSENTIAL CRITERIA:

1. Have or be about to obtain (evidence of submission or awaiting viva exam) a PhD in Chemistry, Chemical Engineering, Biochemistry, Pharmacy or closely related area.
2. At least 3 years' recent relevant practical research experience to include 1 years' 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.