



Job title	Research Associate/Fellow in Biological Chemistry	Job family and level	Research and Teaching Level 4
School/ Department	Chemistry/Biological Chemistry	Location	Biodiscovery Institute

Purpose of role

The purpose of this role will be to have specific responsibility for research, for developing research objectives and proposals for a research project in applying engineering biology techniques to an apoferritin nanocage to improve its abilities to function as a targeted drug delivery platform. Exploring the metabolic diversity of engineered fungal non-ribosomal peptide synthetase-like enzymes for the development of novel antibiotics will require the application of a range of techniques including protein engineering, synthetic and analytical chemistry, mammalian cell culture, single-molecule fluorescence microscopy, and nanomaterial characterization, using a range of analytical methods to purify and characterise new natural products and synthesize new enzyme substrates. The person appointed will be expected to plan and conduct work using the above methodologies and techniques as appropriate to this type of research. To maintain accurate and detailed experimental records and curate the data they generate for long-term access by others. and will be responsible for writing up their work for publication and assisting with further research grant submissions. The person will also be responsible for promoting safety in laboratory work and supervision of less experienced researchers.

The person appointed will have the opportunity to use their initiative and creativity to identify areas for research, develop research methods and extend their research portfolio.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	To plan and conduct research using recognised approaches, methodologies and techniques within analytical and synthetic chemistry to purify fungal natural products and structurally characterise them. To synthesize potential substrates for the fungi and enzymes isolated from them. To conduct enzyme assays and support computational and structural studies being conducted by other researchers. To liaise with external collaborators.	55
2	To analyse and illuminate data, interpret reports, evaluate, and criticise texts and bring new insights to research area.	10
3	To characterise the materials to levels required for publication and archive samples for future research.	10

4	To write up research work for publication and/or contribute to the dissemination at national/international conferences, resulting in successful research outputs.	5
5	To identify opportunities and assist in writing bids for research grant applications. Prepare proposals and applications to both external and/or internal bodies for funding, contractual or accreditation purposes.	5
6	To build relationships with both internal and external contacts in order to exchange information, to form relationships for future collaborations and identify potential sources of funds and/or opportunities for collaboration.	5
7	To provide support, guidance and supervision to other staff and students, where appropriate in own area of expertise.	10

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> ▪ Oral and written English communication skills, including the ability to communicate with clarity on complex scientific publications and information. To present research at internal, national, and international meetings. ▪ Ability to analyse and illuminate data, interpret reports, evaluate and criticise texts and bring new insights. ▪ Ability to creatively apply relevant research approaches, models, techniques, and methods. ▪ Ability to assess and organise resource requirements and deploy effectively. ▪ Ability to build relationships and collaborate with others, both internally and externally. ▪ Ability to work both independently and collaboratively as a team with senior and junior colleagues internally and externally. ▪ To be well organized, self-motivated, demonstrating effective time-management skills and ability to manage the day-to-day running of a research project and to identify research objectives. 	<ul style="list-style-type: none"> ▪ Ability to foster a research culture and commitment to learn in others. ▪ Ability to train others in essential methods and techniques in molecular biology, protein engineering, synthetic and analytical chemistry ▪ Experience in (co)supervision of undergraduate and or postgraduate students.
Knowledge and experience	<ul style="list-style-type: none"> ▪ Some practical experience of applying the specialist skills approaches and techniques required for the role in organic synthesis and a range of analytical Chemistry techniques including HPLC, and NMR mass spectrometry. ▪ Experience in the use of a range of appropriate analytical and science techniques to work within the research area of spectroscopy. 	<p>Practical experience of:</p> <ul style="list-style-type: none"> ▪ High-Pressure Liquid Chromatography (analytical and preparative scale) ▪ NMR interpretation of moderately complex organ molecules ▪ Interpretation of Mass spectrometry data from a range of ionization sources/detector pairings ▪ Synthetic Organic Chemistry including multistep syntheses. ▪ Enzyme assays.
Qualifications, certification and training (relevant to role)	Have a PhD or to be near to completion of in the relevant subject area or have the equivalent in professional qualifications and experience in the area of research.	Membership of a relevant professional body (ACS, RSC, Biochemical society etc).



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

