

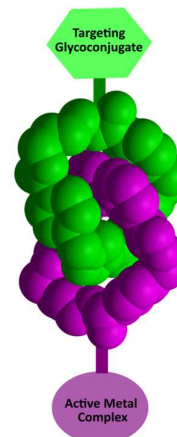
PhD Position in Targeted Antimicrobial Drug Discovery Platform School of Biological and Chemical Sciences

National University of Ireland Galway

Applications are invited from suitably qualified candidates for a PhD position in chemistry under the supervision of Dr Joseph Byrne, School of Biological and Chemical Sciences, National University of Ireland Galway. This position, funded by the Irish Research Council, is available to start as soon as possible after September 2022.

Project Description:

The LINK4LECTIN project will develop a modular strategy for discovery of new antimicrobial agents. New diagnostic and therapeutic tools against bacteria are urgently needed to face the growing global challenge of antimicrobial resistance. This project will establish a strategy for modular tuning and optimisation of hybrid metallodrug candidates for this purpose. The PhD student will explore families of compound, which pair the bacterial protein-targeting ability of glycoconjugates with bioactive metal complexes. If successful, you will focus on design and synthesis of new families of carbohydrate-derivatives, catenanes/rotaxanes and metal complexes for antimicrobial medicinal chemistry applications through this interdisciplinary project.



Information on the research team:

The Byrne Group in the School of Biological and Chemical Sciences is a growing research group that targets carbohydrate-protein interactions to build new diagnostic and therapeutic tools for bacterial infections. Our work is at the interface of carbohydrate chemistry and inorganic chemistry. More information is available at www.byrneresearch.com and www.nuigalway.ie/chemistry/

Job Description:

We are looking for an enthusiastic researcher who can take the initiative and lead work on a new project. As a PhD student, you will join a growing research group, and you will implement the LINK4LECTIN project under the supervision of the Principal Investigator, Dr Byrne. This exciting research will include the organic synthesis and characterisation of carbohydrate-derivatives, supramolecular systems and metal coordination complexes, including analysis of UV/Vis absorption and emission spectroscopy, antimicrobial and biofilm inhibition assays, and confocal/fluorescent microscopy. As part of a structured PhD programme, you will enhance your research portfolio through subject-specific training and gaining transferrable skills. There may be opportunities to travel to collaborators' labs for training and collaboration, as well as to international conferences. You will carry out research in the lab with curiosity and enthusiasm. You will actively engage with colleagues in the School of Biological and Chemical Sciences and collaborators to maximise the impact of your research.

Duties:

- Undertake research as directed by the PI, designing and synthesising mechanically-interlocked molecules, carbohydrate derivatives and metal complexes, and establishing their antimicrobial or bio-imaging behaviour
- Perform basic research towards the completion of your doctoral thesis: including preparing, conducting and recording the outcome of experiments; developing appropriate research methods; writing up results in the form of reports, manuscripts and thesis chapters
- Enrol in the [Structured PhD programme](#), and complete all necessary credits for your progression (including requirement to contribute to teaching of undergraduates)
- Read academic papers, journals and textbooks to keep abreast of developments in your own specialism and related fields

- Responsibly use material resources within the project budget
- Contribute to the broader activities of the research team (group meetings, health and safety, student supervision, maintenance of equipment, etc.), the School and the University
- Deliver presentations at national and international conferences and meetings, and undertake outreach activities relevant to LINK4LECTIN
- Publish data in leading journals and/or protect any new intellectual property
- Perform research in accordance with the university's research integrity policy, the project data management policy and other relevant policies
- Carry out any other duties required by PI for the successful implementation of the project

Essential Requirements:

- MSc in synthetic organic chemistry, or related area (complete or submitted). An experienced BSc graduate who has demonstrated outstanding performance in their undergraduate studies will also be considered
- Motivation and willingness to take initiative in developing research projects
- An demonstrated interest in one or more of (i) supramolecular chemistry; (ii) carbohydrate chemistry; (iii) organic synthesis; (iv) metal coordination chemistry
- Strong interpersonal skills and ability to work well within a collaborative team
- Excellent verbal and written English language communication skills
- Demonstrates strong organisational skills

Desirable Requirements:

- Experience working in synthetic chemistry laboratory and knowledge of NMR spectroscopy in structure determination, and column chromatography for purification
- Additional training in medicinal chemistry and/or cell-culture techniques
- Relevant university or industry research experience will be an advantage
- Familiarity with equality, diversity and inclusion activities or media engagement

Scholarship: €18,500 per annum (tax-free stipend) with an additional contribution of €5,750 towards fees/levies as per IRC awards regulations. All nationalities may apply. Travel to appropriate conferences, research trips and/or training secondments may also be funded.

Start date: As soon as possible between September-December 2022.

To Apply: Applications must be send by email to joseph.byrne@nuigalway.ie and must contain "Link4Lectin-PhD" in the subject line. In your application please include:

1. A cover letter which gives a detailed personal statement including your motivation for applying for this particular studentship
2. A PDF copy of an example of your own independent written research work in the area of chemistry (e.g. BSc research report, MSc thesis)
3. A full CV including the contact details of two referees. Include a list of any awards and evidence of excellent academic performance to date. Include all grades in CV. Please specifically detail any experience and skills in the area of synthetic chemistry.

Closing date for receipt of applications is 5.00 pm, 9 August 2022

Suitable candidates will be invited to interview for the position and arrangements for a start date made with the successful candidate. **Interviews will take place virtually.**

We reserve the right to re-advertise or extend the closing date for this post.

National University of Ireland, Galway is an equal opportunities employer

