

Job Title: Research Associate – HDAC-Targeting PROTAC Synthesis and Chemical
Grade: 7
Salary: £39,906 per annum
Department: Molecular and Cell Biology
Hours/Contract: Full time fixed term contract
Job Family: Teaching and Research
Reference: 13263

Role Purpose

Applications are invited for a 12-month Postdoctoral Research Associate position funded by the Medical Research Council. This is an exciting opportunity to be a researcher in an interdisciplinary project entitled “Developing PROTACs for the Target Validation of Individual Histone Deacetylase Corepressor Complexes.” This is a collaborative project between the groups of Dr James Hodgkinson (School of Chemistry and Leicester Institute of Structural and Chemical Biology, LISCB), Professor John Schwabe (Department of Molecular and Cell Biology and LISCB) and Professor Shaun Cowley (Department of Molecular and Cell Biology).

In this role your primary responsibility will be implementing the organic synthesis and biological evaluation of novel proteolysis-targeting chimera (PROTAC) libraries for the targeted degradation of Histone Deacetylase (HDAC) enzymes and associated corepressor complexes. Candidates must have hands-on experience in the organic synthesis of HDAC-targeting PROTACs, molecular and cell biology methodologies for their evaluation, including expression of class I HDAC complexes from mammalian cell culture, and quantitative proteomics. The successful candidate will also contribute high-level research skills in chemical biology through personal expertise and by supporting the wider research team, and will take a leading role in the presentation of results and manuscript/IP preparation.

The Leicester Institute of Structural and Chemical Biology (LISCB) is a cross-disciplinary entity that brings together internationally renowned research in structural biology and chemical biology at the University of Leicester into a single world-leading unit. The Institute aims to exploit synergies in research technologies to deliver major advances in both fundamental and translational research.

Main Duties and Responsibilities

Research:

- Carry out multi-step organic synthesis of HDAC targeting PROTACs and their analysis by differing characterisation techniques.
- Carry out the biological evaluation of novel HDAC targeting PROTAC libraries in-vitro and in cells.
- Develop and apply in vitro and in-cell assays to evaluate the effectiveness of HDAC-targeting PROTAC libraries. This includes but is not limited to western blotting, enzymatic assays, cell viability assays, biophysical techniques and proteomics.
- The protein expression and purification HDAC corepressor complexes from mammalian cells and/or components as well as E3-ligase/ubiquitination-proteasome system proteins
- Keep excellent, accurate records and data collation and retention on research carried out throughout the project.
- Responsible for personal and collaborative research, resulting in significant contributions to project deliverables, scholarly articles, research papers suitable for publication, patent applications and conference presentations.





- Contributing to writing research proposals, manuscripts for publication and patent applications
- Contributing, as an experienced researcher, to determining the direction of the programme in line with reaching the research goals. This will include elements of research planning, project management.
- Co-supervision of research students and provision of advice and guidance to other members of the team, both research staff (PhDs and PDRAs) and students (undergraduates) including a mix of a desk-based and lab based research.
- Contribute to the overall research programme, testing and developing research strategies to enable work to be carried out that will result in the emergence of new understanding within the research field.
- Representing the research group at external meetings, project review meetings and workshops so as to improve the reputation of the group and that of the role holder.
- In agreement with the line manager, liaise with project collaborators to progress the research.

Professional Development:

- The candidate will be supported and encouraged to take up opportunities support professional development. This includes relevant training courses and conference presentations in agreement with the line manager.

Impact and Knowledge Exchange:

- Network and contribute to the maintaining and furthering of the wider research programme and research area.
- To contribute to industry collaborations.
- To consult effectively on own specialism directly with people external to the University.
- To engage positively and pro-actively in research impact.

Leadership and Citizenship:

- Guidance to other team members both research staff and students.
- Pro-actively build networks and collaborations.
- Providing mentoring and coaching to research students

Internal and External Relationships

- Regular meetings and progress updates with members of the programme research groups.
- Meeting members of the department for critical discussion of the research and exchange of new ideas and approaches that might benefit the research.
- Liaison with external collaborators.

Planning and Organising

You will be required to effectively manage your time to plan your research activity and to deliver on the priorities of the project:

- Prioritise tasks within agreed work schedules, including the evaluation of specific compound libraires within agreed timelines with the PI;
- Plan for specific aspects of research incorporating issues such as deadlines for





compound evaluation, project milestones and overall research aims;

- Adapt daily and weekly plans to accommodate new developments and be flexible to the changing priorities of the research project;

Qualifications, Knowledge and Experience

Essential

- PhD awarded (or near completion) in chemical biology with research directly related to HDACs.*
- Good honours degree in chemistry or a closely related discipline.*
- Proven knowledge and hands-on experience in the expression and purification of class I HDAC complexes from mammalian cell culture.*
- Proven knowledge and hands-on experience in multi-step synthetic organic chemistry of HDAC-targeting PROTACs and their characterisation.*
- Hands-on experience in evaluating PROTACs using cell-based and in vitro assays related to HDACs.*
- Experience in quantitative proteomic evaluation using PROTACs and associated bioinformatic analysis.*
- A publication record in high-quality peer-reviewed journals and evidence of delivering presentations at scientific conferences, appropriate to the applicant's career stage.*

Skills, Abilities and Competencies

Essential

- Excellent oral and written communication skills, including the ability to communicate complex information with clarity*
- Well organised and self-motivated with the ability to manage the day-to-day running of a research project, to identify research objectives and carry out appropriate research activities within a given timescale*
- Evidence of working effectively as part of a team and the ability to work independently
- Working towards independence and ability to be involved in collaborative research
- Ability to work in a shared office/lab environment
- Friendly, helpful and productive interactions with colleagues
- Well-developed understanding of Health and Safety regulations and procedures
- Ability to interact with academic, research, and professional services colleagues

Desirable

- Ability to supervise undergraduate and postgraduate students in the laboratory
- Demonstrable ability to produce independent research ideas

****Criteria to be used in shortlisting candidates for interview***

Reason for Fixed Term Contract





The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment.

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

Supporting University Activities

As a University of Leicester citizen, you are encouraged to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We encourage all staff as citizens to work flexibly across the University if required. If supporting these activities is likely to affect your workload, please speak to your line manager in the first instance

University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Freedom of Speech

The University is committed to upholding freedom of speech and academic freedom within the law throughout our recruitment processes. We ensure that all candidates are considered based on merit and suitability for the role, without regard to their lawful viewpoints or the expression of challenging or controversial ideas. Our recruitment policies and practices are designed to protect applicants from discrimination or adverse treatment on the basis of their opinions, and to foster an environment where open debate and diverse perspectives are valued as essential to our academic mission.

Equity and Diversity

We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

