

Job Description

Research Fellow in Chemical Biology

Department: Chemistry

Grade: 7

Location: UCL Bloomsbury Campus

Reports to: Prof Vijay Chudasama and Dr James Baker

Context

The Chemistry Department

The Chemistry Department at University College London is the oldest in England, and today is one of the best in the UK, being ranked 2nd in the UK for the world-class impact of its research in REF(2014). We are located in Bloomsbury, at the heart of London, and offer an exciting and vibrant environment in which to study in one of the UK's top universities. The Department of Chemistry at UCL is committed to supporting excellence in both research and teaching. The department offers undergraduate BSc and MSci programmes in Chemistry and currently teaches 400 undergraduates registered in Chemistry as well as students who select Chemistry on the Natural Sciences programme and first year Chemistry for life scientists.

The Chemistry Department has over 50 members of academic staff carrying out world-leading research. We specialise in the areas of organic synthesis, chemical biology, computational chemistry, nanotechnology, inorganic and materials chemistry, physical chemistry and chemical physics. The department has an annual research income of around £15 million, derived from many sources including the Research Councils (EPSRC, BBSRC, MRC, and NERC), European Commission and a wide range of charities and industrial partners in the UK, Europe and the USA.

Details about our research can be found on the departmental website <http://www.ucl.ac.uk/chemistry>

The Project - *Site-selective antibody modification*

The Research Associate will work in the Department of Chemistry at UCL's Bloomsbury Campus on a research project supervised by Prof Vijay Chudasama and Dr Jamie Baker. The overall project goal is to develop a new platform for the construction of site-selective antibody conjugates.

Background. Antibody-Drug Conjugates (ADCs) represent amongst the most promising class of targeted therapeutics in development, with a number of recent FDA approvals. However, it is widely considered that the molecular construction of ADCs currently is still far from optimal, and that new technologies in this area are

urgently required to help enable them to achieve their clinical potential.

In this project we are proposing to pioneer a new approach for the generation of such antibody conjugates, which attaches the drugs at specific locations on the antibody, generating superior homogeneous conjugates. Our strategy, crucially, will not require genetic engineering of the antibodies to incorporate reactive handles, and is thus applicable directly to native ‘off-the-shelf’ antibodies. This will maximise the accessibility of homogenous ADCs to researchers across the world and ensure that the production yields are maintained as high as possible, ultimately reducing the cost of these relatively complex biopharmaceuticals.

We aim to achieve this goal by targeting the C-terminal cysteines present on the vast majority of clinically validated antibodies. This is a challenging aim as whilst a wide variety of methods have been established for the selective modification of various amino acids on peptides/proteins, there is an absence of a reliable strategy for modification at the C-terminus. As such, the development of a C-terminal modification strategy would also provide a fundamental advance in the broader field of bioconjugation.

The successful applicant will join a highly motivated group of researchers working at the interface of chemical biology and targeted therapeutics.

Main purpose of the job

The post holder will be required to carry out research into a new platform for site-selective antibody conjugation. This will involve the synthesis of reagents, their application to the construction of antibody conjugates, and the characterisation of these conjugates.

Duties and responsibilities:

- To contribute to the design and implementation of the research project into the site-selective modification of antibodies.
- To carry out the reagent synthesis, bioconjugation, and antibody conjugate analysis.
- To record, analyze and write up the results of all experiments.
- To contribute to the drafting and submitting of papers to peer reviewed journals.
- To prepare progress reports on research for funding bodies as required.
- To contribute to the preparation and drafting of research bids and proposals.
- To contribute to the overall activities of the research team and department as required.
- To undertake a limited amount of teaching in relation to subject area.
- To contribute to the induction and direction of other research staff and students as requested.
- Responsible for ensuring that equipment is safe and maintained in working order.
- The job description reflects the present requirements of the post, and as duties and responsibilities change/develop, the job description will be reviewed and be subject to amendment in consultation with the post-holder.
- The postholder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by the line manager.

- The postholder will actively follow UCL policies including Equal Opportunities and be expected to give consideration within their role as to how they can actively advance equality of opportunity and good relations between people who share a relevant protected characteristic and people who do not share it.
- The postholder will maintain an awareness and observation of Fire and Health & Safety Regulations.
- To be aware of and act upon:

Disciplinary procedure and disciplinary rules

Grievance procedure

Section 7 and 8 of the Health and Safety at Work Act

Person Specification

Criteria	Essential or Desirable	Assessment method (Application/Interview)
Qualifications, experience and knowledge		
PhD in Chemical Biology or related area	Essential	Application
GCSE English Grade C or above (or equivalent, e.g. IELTS)	Essential	Application
Knowledge of research techniques including in organic synthesis and protein/peptide/fragment chemistry	Essential	Application/Interview
Experience in multi-step organic synthesis	Essential	Application/Interview
Experience of protein/peptide/fragment chemistry	Essential	Application/Interview
Experience in the construction of protein/antibody conjugates	Desirable	Application/Interview
Experience in the analysis protein/antibody conjugates, including by SDS-PAGE, and LCMS	Desirable	Application/Interview
Experience of working in a research environment	Essential	Application/Interview
Experience of multi-disciplinary working	Essential	Application/Interview
Skills and abilities		
Proven research skills	Essential	Application/Interview
Ability to analyse and write up data	Essential	Application/Interview
Ability to present complex information effectively to a range of audiences	Essential	Application/Interview
Effective written and verbal communication skills in English	Essential	Application/Interview
Personal attributes		
Commitment to high quality research	Essential	Application/Interview
Ability to work collaboratively and as part of a team	Essential	Application/Interview

General Information

Terms & Conditions of Employment

The post is a UCL grade 7 post, the salary for which ranges from £36,028 to £43,533 per annum (including London Allowance of £3,211 p.a.). Starting salary is usually £36,028.

All posts that are based outside of London, for example at Harwell, will **not** have London Allowance included in the salary.

Please note, appointment at Grade 7 is dependent upon having been awarded a PhD; if this is not the case, initial appointment will be at Research Assistant Grade 6B (salary £31,542 to £33,257 per annum, including London Allowance of £3,211) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis.

Progression through the salary scale is incremental. Cost of living pay awards are negotiated nationally and are normally effective from 1st August each year. UCL's non-clinical pay and grading structure is at http://www.ucl.ac.uk/hr/salary_scales/final_grades.php.

UCL's terms & conditions for research, teaching and professional services staff are at:

<https://www.ucl.ac.uk/human-resources/conditions-service-research-teaching-and-professional-services-staff>

The full range of benefits is at http://www.ucl.ac.uk/hr/benefits/employee_benefits.php

General information for Overseas Applicants

<https://www.ucl.ac.uk/human-resources/working-ucl/employment-contract-administration-team/immigration>

<https://www.ucl.ac.uk/human-resources/working-ucl/relocating-uk-guide>

Equal Opportunities

www.ucl.ac.uk/hr/docs/equal_opportunity.pdf

The Department has been awarded a Silver Athena Swan Award and we support the Athena beliefs that:

- The advancement of science, engineering and technology (SET) is fundamental to quality of life across the globe.
- It is vitally important that women are adequately represented in what has traditionally been, and is still, a male-dominated area.
- Science cannot reach its full potential unless it can benefit from the talents of the whole population, and until women and men can benefit equally from the opportunities it affords.

Further information on Athena Swan is at <http://www.athenaswan.org.uk/>

Apply

To apply for this position visit:

ucl.ac.uk/jobs

Search under Ref no:1873449