ICR The Institute of Cancer Research

Higher Scientific Officer
Target and E3 ligase Discovery, Biology, Centre for Protein Degradation
Candidate Information

October 2024

Our mission is to make the discoveries that defeat cancer.

Context

The Institute of Cancer Research

About our organisation

We are one of the world's most influential cancer research institutes with an outstanding record of achievement dating back more than 100 years. Together with our hospital partner The Royal Marsden, we are rated in the top four centres for cancer research and treatment worldwide. As well as being a world-class institute, we are a college of the University of London. In 2021 we were ranked second in the league table of university research quality compiled from the Research Excellence Framework (REF 2021). We are a charity, and we rely on support from partner organisations, donors and the public. We have more than 1000 staff and postgraduate students across three sites – in Chelsea and Sutton.

Centre for Cancer Drug Discovery at the ICR

Scientists in the Centre for Cancer Drug Discovery implement innovative drug discovery technologies, discover novel drug modalities and develop these as rapidly as possible from the laboratory through to hypothesis-testing early clinical trials. We publish our work extensively and have a large network of collaborations with academia, biotechnology companies, and the pharmaceutical industry. Our drug discovery Biology teams are dedicated to translational and drug discovery research, applying molecular pharmacology and cancer biology approaches to explore the therapeutic potential of new targets, and implementing functional and mechanistic assays to support progression of new therapeutics.

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Context

Centre for Protein Degradation

The ICR has established the Centre for Protein Degradation (CPD) to accelerate targeted protein degradation-based drug discovery – an innovative approach utilizing drug-induced degradation of harmful proteins *via* cell endogenous protein disposal system. Our aim is to discover novel molecular glue degraders and PROTACs for treatment of the most challenging cancers. Based at the ICR's Centre for Cancer Drug Discovery (CCDD) the CPD benefits from state-of-the-art drug discovery platforms – biology, medicinal chemistry, biophysics, structural biology, proteomics, computational modelling, as well as strong cancer biology and clinical expertise within the CCDD, the ICR and the Royal Marsden Hospital. We also have established collaborations with biotech and pharma industry.

The Induced Proximity Therapeutics team within the Centre for Protein Degradation focuses on biology aspects of targeted protein degradation drug discovery and supports the CPD in the following areas of research: 1) drug screening, profiling and molecular mechanisms of action; 2) discovery of novel E3 ligase ligands; 3) target identification and validation. This role will primarily contribute to target and E3 ligase discovery (areas 2 & 3) but may also contribute to screening assays and pharmacological characterisation of chemical compounds.

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The position

About the Higher Scientific Officer position

The postholder will be working in the interdisciplinary CPD team and will collaborate with our internal and external industry partners to deliver biology aspects of our exploratory and drug discovery projects, with a primary focus on **discovery and validation of novel molecular glue and PROTAC targets, and E3 ligases for challenging oncology applications**.

This position is suitable for a strong team player passionate about innovative solutions for cancer drug discovery and development of novel technologies. They should have a solid background in **cancer cell- and molecular biology,** hands-on experience in **cell biology** and ***in vitro* genetic manipulation** techniques applicable for target validation and interrogation of cell signalling pathways. Experience in targeted protein degradation, biochemical and pharmacology assays would be an additional advantage.

Contract term: the position is offered on a **2-year fixed-term contract in the first instance**.

Salary: starting salary is in the range of **£37,050 – £45,732 per annum** depending on experience.

Annual leave entitlement is **28 days per annum**. This will increase by a further day after 2 years' and 5 years' service. There is an additional entitlement to 8 bank/public holidays and 3 ICR-set privilege days.

Pension: Universities Superannuation Scheme (USS) is available. Rate of contributions is determined by USS and details of the costs and benefits of this scheme can be found on their website. Staff transferring from the NHS can opt to remain in the NHS Pension Scheme.

Other benefits: we offer a range of family friendly benefits such as flexible working, a parents' group, and a maternity mentoring scheme. Other great benefits include interest free loans for discounted season tickets for travel and bicycle purchases, access to the NHS discounts website, a free and confidential Employee Assistance Programme which offers a range of well-being, financial and legal advice services, two staff restaurants, and access to a gym and sporting facilities at our Sutton site.

Further information

For further information please contact Dr Agnieszka Konopacka Agnieszka.Konopacka@icr.ac.uk. This job description reflects the current position and is subject to review and alteration in detail and emphasis in the light of future changes or development.

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Job description

Department / division:	Centre for Protein Degradation, Division of Cancer Therapeutics
Location:	Sutton, on site
Pay grade / staff group:	Higher Scientific Officer: £37,050 – £45,732 per annum
Hours / duration:	Full time (35 hours per week), Monday to Friday. Fixed term contract for 2 years in the first instance.
Reports to:	Dr Agnieszka Konopacka, Group Leader, Induced Proximity Therapeutics, ICR Centre for Protein Degradation, Centre for Cancer Drug Discovery.
Main purpose of the job:	Provide drug target validation data for molecular glue degraders and PROTACs, and support discovery of novel E3 ligases for therapeutic applications

Key Roles and Responsibilities

Perform experiments to validate targets for novel molecular glue degraders (MGDs) and PROTACs, and characterise novel E3 ligases
Develop cell models for target validation and E3 ligase discovery (e.g. degron tagging, CRISPR KI/ KO, lentivirus transduction)
Design cell-based and *in vitro* assays to assess effects of target degradation and downstream signalling
Develop novel proximity technologies for biological characterisation of MGDs and PROTACs, novel targets and E3 ligases
Routinely use cell biology, genetic and pharmacological manipulation techniques to interrogate novel targets and E3 ligases
Prepare samples for proteomics, analyse and interpret data (in collaboration with the data science and proteomics groups)

Other Roles and Responsibilities

Design and run experiments, analyse and interpret data
Maintain accurate electronic experimental records

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Work effectively as part of a multidisciplinary team of disease and drug discovery scientists including biologists, biophysicists and chemists and with external collaborators
Keep up to date with relevant scientific literature
Prepare and present results at internal or external meetings
Prepare data for patent applications and publications
Contribute to publications, internal and external presentations

General

All staff must be familiar with and adhere to any ICR policies that are relevant to their work
Adhere to the ICR confidentiality and data protection policies, including personal and sensitive data, in line with the General Data Protection Regulations
To work in accordance with the ICR's Values
To promote a safe, healthy and fair environment for people to work
This job description reflects the present position and is subject to review and alteration in detail and emphasis in the light of future changes or development.
Any other duties that are consistent with the nature and grade of the post that may be required

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Person specification

Education and Knowledge

First degree in biological science or biochemistry	Essential
PhD in biological/biochemical sciences	Essential
Knowledge of cancer cell biology	Essential
Expertise in molecular biology and *in vitro* genetic manipulation techniques	Essential
Excellent technical expertise	Essential
Knowledge of targeted protein degradation and ubiquitination biology	Desirable
Knowledge of pharmacology	Desirable
Knowledge of biochemistry	Desirable

Skills

Intellectual curiosity and strong motivation to learn novel technologies and achieve professional excellence	Essential
Excellent skills in broad range of cell and molecular biology and biochemical techniques	Essential
Ability to adapt and develop technologies	Essential
Ability to plan, organise and prioritise work across multiple projects	Essential
Good oral and written communication skills	Essential
Great collaboration skills, including with interdisciplinary teams	Essential
Great computer skills (MS Office, computer software relevant to the role)	Essential
Great data analysis and documentation skills	Essential

Experience

Experience working in cell and molecular biology lab	Essential
Experience in molecular cloning and genetic manipulation techniques *(e.g., CRISPR KO/KI, siRNA, lentivirus transduction, generation transgenic cell lines)*	Essential
Experience in broad range of cellular/molecular biology techniques *(e.g., western blot, immunoprecipitation, immunofluorescence imaging, luminescence assays - HiBiT, ELISA, flow cytometry, nanoBRET, FRET, proximity labelling)*	Essential
Experience in working with cell cancer models and assays *(e.g., viability, proliferation, apoptosis, migration)*	Essential
Experience in targeted protein degradation assays	Desirable

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(e.g., degradation potency, ubiquitination, ternary complex)	
Experience in drug target validation	Desirable
Experience in pharmacological compound profiling	Desirable
Experience in biochemical assays *(e.g., protein-drug binding, ubiquitination, protein-protein interactions, ternary complex)*	Desirable

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Our values

The ICR has a highly skilled and committed workforce, with a wide variety of roles, each requiring different skills. But whether you work as a researcher, or work as part of our corporate team, your work and behaviour is underpinned by these six values. They are what bring us together as one team - as 'One ICR'.

Pursuing excellence

We aspire to excellence in everything we do, and we aim to be leaders in our field.

Acting with Integrity

We promote an open and honest environment that gives credit and acknowledges mistakes, so that our actions stand up to scrutiny.

Valuing all our people

We value the contribution of all our people, help them reach their full potential, and treat everyone with kindness and respect.

Working together

We collaborate with colleagues and partners to bring together different skills, resources and perspectives.

Leading innovation

We do things differently in ways that no one else has done before, and we share the expertise and learning we gain.

Making a difference

We all play our part, doing a little bit more, a little bit better, to help improve the lives of people with cancer.

Our values set out how each of us at the ICR, works together to meet our mission – to make the discoveries that defeat cancer. *They summarise our desired behaviours, attitudes and culture – how we value one another and how we take pride in the work we do, to deliver impact for people with cancer and their loved ones."*

Professor Kristian Helin
Chief Executive