ICR The Institute of Cancer Research

Senior Scientific Officer: Structural Biology of Cell Signalling

Candidate Information

November 2024

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. We are world leaders in identifying cancer genes, discovering cancer drugs and developing precision radiotherapy. 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.

We came second in the league table of university research quality compiled from the Research Excellence Framework (REF 2021). We have charitable status and rely on support from partner organisations, charities, donors and the general public. We have more than 1000 staff and postgraduate students across three sites – in Chelsea and Sutton.

Academic Services

At the ICR we aim to defeat cancer through scientific excellence, innovation and partnership. These principles also underpin our approach to scientific infrastructure, which is among the very best of any research centre in the UK. ICR benefits from our continual investment in world-leading scientific services that combine cutting-edge equipment with a highly skilled workforce.

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Structural Biology of Cell Signalling Team, Divisions of Structural Biology and Cancer Biology

Work in the Structural Biology of Cell Signalling Team, led by Professor Sebastian Guettler, in the ICR Divisions of Structural Biology and Cancer Biology centres on the molecular mechanisms of Wnt/β-catenin signalling and telomere maintenance, both of which play key roles in stem cells and a wide range of cancers. A core interest of the team is to understand how ADP-ribosylation, a complex and extremely versatile post-translational modification, controls both of these systems, and how ADP-ribosyltransferases are themselves regulated.

We seek a Senior Scientific Officer to investigate the molecular mechanisms of Wnt/β-catenin signalling and telomere maintenance by *in vitro* approaches, with a particular focus on the regulation by ADP-ribosylation through tankyrase. A large part of the work will be centred on understanding tankyrase regulation and modulation by small molecules. The role consists of 70% research and 30% laboratory management responsibilities. You will join a multidisciplinary, collaborative and international team with a core expertise in biochemistry, structural biology (electron microscopy, X-ray crystallography), biophysics and genetics and established collaborations in chemistry and proteomics. The post would be particularly suitable for a candidate seeking to apply biochemistry, biophysics and structural biology, primarily X-ray crystallography but also cryo-electron microscopy, to biological questions. The available projects will offer a stimulating balance of independence and collaboration.

For more information on our work, please refer to the publications below and visit our lab website https:/sguettlerlab.org.

Pillay, N., Mariotti, L., Zaleska, M., Inian, O., Jessop, M., Hibbs, S., Desfosses, A., Hopkins, P.C.R., Templeton, C.M., Beuron, F., Morris, E.P., and Guettler, S. (2022). Structural basis of tankyrase activation by polymerization. Nature 612(7938), 162-169.

Ranes, M., Zaleska, M., Sakalas, S., Knight, R., and Guettler, S. (2021). Reconstitution of the destruction complex defines roles of AXIN polymers and APC in β-catenin capture, phosphorylation, and ubiquitylation. Molecular Cell 81, 3246–3261.e11.

Pollock, K., Liu, M., Zaleska, M., Pfuhl, M., Collins, I., Guettler, S. (2019). Fragment-based screening identifies molecules targeting the substrate-binding ankyrin repeat domains of tankyrase. Sci Rep 9, 19130.

Our mission is to make the discoveries that defeat cancer.

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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 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 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

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Job description

Department / division:	Structural Biology and Cancer Biology
Pay grade / staff group:	Senior Scientific Officer
Hours / duration:	Full time (35 hours per week), Fixed term contract for three years with possibility of extension
Reports to:	Sebastian Guettler
Main purpose of the job:	Biochemical, biophysical and structural investigation of cell signalling; general laboratory support

Duties and responsibilities:

Together with team members and collaborators, to shape and conduct a multidisciplinary, innovative research programme by providing intellectual and experimental input
To generate protein expression constructs using a range of molecular cloning techniques
To produce purified recombinant proteins at high quality, from bacterial and insect cell cultures for biochemical, biophysical and structural studies by X-ray crystallography and electron microscopy
To conduct biochemical and biophysical studies to study protein mechanisms and analyse the impact of small molecules on protein function, including protein:protein interactions, protein stability and enzymatic activity
To lead and support the structural characterisation of protein complexes and small molecule interactions with proteins by X-ray crystallography and cryo-electron microscopy, as applicable
To interpret experimental findings, generate and test hypotheses of molecular mechanisms informed by structural and biochemical studies, and to plan future experiments
To support the experimental work of other group members in their respective projects, as required and agreed upon
To contribute to national and international collaborations of the group
To assist in maintaining an efficient, productive, well-organised and tidy laboratory, which includes the maintenance of standard laboratory equipment and the curation of reagent collections, such as plasmid and antibody inventories
To order the necessary consumables and equipment in accordance with budgets available
To contribute to budget management
To work independently and to consult when appropriate
To work in a flexible but organised manner to meet objectives and deadlines
To maintain accurate records of experiments and data
To further develop a knowledge of the literature in the subject areas studied by the laboratory

To present your work in seminars and participate in journal clubs, as agreed upon
To contribute to writing drafts of publications and funding applications
To contribute to the academic life and positive research culture of the laboratory, and by extension that of the ICR
To interact with the Group Leader and other group and Division members, fostering a positive working environment
To work closely with the Division's Laboratory and Facility Managers, and the Health, Safety, Environment and Quality (HSEQ) Team, to implement appropriate working practices in the laboratory
To contribute to the supervision and training of junior staff
Any general laboratory duties that will be shared with other members of the team

General

All staff must ensure that they familiarise themselves with and adhere to any ICR policies that are relevant to their work and that all personal and sensitive personal data is treated with the utmost confidentiality and in line with the General Data Protection Regulations
Any other duties that are consistent with the nature and grade of the post that may be required.
To work in accordance with the ICR's Values.
To promote a safe, healthy and fair environment for people to work, where bullying and harassment will not be tolerated.

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Person specification

Education and Knowledge

PhD in a biological science or any other area relevant to the laboratory's research	Essential
Evidence of substantial contributions to research publications	Essential

Skills

Demonstrable ability to design and conduct experiments	Essential
Demonstrable skills in molecular biology (recombinant DNA techniques)	Essential
Demonstrable skills in protein biochemistry and biophysics	Essential
Demonstrable skills in structural biology, particularly X-ray crystallography	Essential
Fundamental experience in cryo-electron microscopy	Essential
Competent at laboratory techniques, including protocol development and optimisation, problem solving, and troubleshooting	Essential
Ability to work effectively and efficiently, both independently and as part of a team	Essential
Good observation skills, attention to detail and ability to keep appropriate records	Essential
Proficient IT skills	Essential
Excellent oral and written communication skills	Essential
Excellent organisational skills. This includes the ability to effectively curate reagent inventories and conduct collaborations.	Essential
Excellent interpersonal skills with the ability to establish effective working relationships	Essential
Independent scientific thinking and readiness to acquire a solid knowledge of the literature relevant to the project	Essential
Enthusiasm to actively develop and shape an innovative, multidisciplinary project	Essential
Committed to learning new techniques/approaches required for the project	Essential

Experience

Solid experience in recombinant DNA techniques	Essential
Solid experience in biochemistry and biophysics	Essential
Solid experience in structural biology, particularly as applied to early drug discovery	Essential
Experience in co-supervising Research Students	Essential
Experience in laboratory and budget management	Essential

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Benefits

as a minimum requirement candidates must have submitted their thesis by the start date of their employment and awarded their PhD within the six month probationary period.

We offer a fantastic working environment, great opportunities for career development and the chance to make a real difference to defeat cancer. We aim to recruit and develop the best – the most outstanding scientists and clinicians, and the most talented professional and administrative staff.

The annual leave entitlement for full time employees is 28 days per annum on joining. This will increase by a further day after 2 years' and 5 years' service.

Staff membership to the Universities Superannuation Scheme (USS) is available. The USS is a defined benefit scheme and provides a highly competitive pension scheme with robust benefits. The rate of contributions is determined by USS and details of the costs and benefits of this scheme can be found on their website. If staff are transferring from the NHS, they can opt to remain members of the NHS Pension Scheme.

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

You may contact Sebastian Guettler for further information by emailing sebastian.guettler@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.