

Job  
description

# Postdoctoral Training Fellow: CR-UK Therapeutic Catalyst Grant

## Candidate Information

May 2023

<b>Department / division:</b>	Division of Cancer Therapeutics, Chromosomal Translocations Group
<b>Pay grade / staff group:</b>	Postdoctoral Training Fellow
<b>Hours / duration:</b>	Full time (35 hours per week), Monday to Friday. Fixed term contract for 18 Months
<b>Reports to:</b>	Professor Terry Rabbits, Team Leader

### Context

We are seeking to appoint a highly motivated Post-Doctoral Training Fellow (PDTF).

The project is funded by a CR-UK Therapeutic Catalyst Grant focussed on developing chemical compounds that were derived using an intracellular antibody that bind to the T cell acute leukaemia oncogenic transcription factor, LMO2. These new compounds were generated using our novel Antibody-derived (Abd) technology and have been made into degraders (Proteolysis-targeting chimaeras (Protac) compounds). The work of this PDTF post will be to develop protocols for successful production of soluble, recombinant LMO2 protein to facilitate structural studies, including X-ray crystallography. The project will also involve studying the transcription factor complex with our compounds using new drug designs synthesised by our collaborating chemistry laboratory.

You should possess a PhD in structural biology, and have significant experience in working with recombinant proteins, in particular antibodies and transcription factors. You must also have a track record with protein engineering and as well as in biophysical methods for assaying protein-ligand interaction and X-ray crystallography. Experience with cell-based models, such as 3-D cultures would be an advantage.

Our mission  
is to make the  
discoveries that  
defeat cancer.

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## Main purpose of the job

Use of structural biology methods for evaluation and characterisation of LMO2- binding compounds, specifically for hit to lead development of these LMO2-binding compounds selected using Antibodyderived (Abd) technology. This progressive work will require the assessment of potency and efficacy of compounds in cell-based assays, aimed at preclinical modelling in T cell leukaemia.

## Duties and responsibilities

### Key duties

Express and improve soluble recombinant LMO2 in complex with anti-LMO2 scFv suitable for X-ray crystallography

Conduct X-ray crystallography structure determinations with LMO2 in complex with compounds to inform structure-based drug development

Perform in vitro biophysical assays to determine the binding characteristics of LMO2 compounds with the LMO2 protein

Perform in vitro biochemical and biophysical assays for evaluation of effects of new LMO2 compounds

Carry out cell-based assays for evaluation of effects of new LMO2 compounds

Prepare reports of results for oral or written presentations at internal and external meetings and for publication in scientific journals or patents

Ensure that work conforms to the requirements of COSHH, Local Rules for Health and Safety, Home Office regulations and other Codes of Practice as required by the ICR Safety Policy

Work and communicate effectively with other members of the Team, and external collaborators

## Workforce Agreement for Postdoctoral Training Fellows

The ICR has a workforce agreement stating that Postdoctoral Training Fellows can only be employed for up to 7 years as PDTF at the ICR, providing total postdoctoral experience (including previous employment at this level elsewhere) does not exceed 10 years.

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## 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.

## Person specification

### Education and Knowledge

PhD in Structural Biology	Essential*
Strong knowledge of protein chemistry.	Essential
Strong knowledge of crystallography & NMR	Essential
Strong knowledge of LMO2 biology	Essential
Knowledge of background to T cell acute leukaemia	Desirable

### Skills

Bacterial, mammalian or insect cell recombinant protein expression	Essential
Structural determination of protein-protein complexes, protein-ligands complexes using X-ray crystallography & NMR methods	Essential
Tissue culture methods	Essential
Molecular biology techniques	Essential
Cellular biology techniques	Desirable
Experience with Cryo-EM	Desirable

### Experience

Molecular biology techniques, including cloning, PCR, mutagenesis	Essential
Recombinant protein expression (including protein complexes) in bacteria, insect cells & mammalian expression systems	Essential

\*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.

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Protein purification for structural studies including protein-protein and protein ligand complexes	Essential
Biophysical techniques for protein-protein and protein-ligand interactions, including surface plasmon resonance, Isothermal Titration Calorimetry, bio-layer interferometry	Essential
Protein crystallization and structure determination by X-ray crystallography	Essential
NMR analysis of protein structures, including waterLOGSY	Essential
Tissue culture, cell transfection, cell immunofluorescence	Desirable
Immunobiology methods, including flow cytometry, ELISA	Desirable
Cryo-EM sample grid optimisation and data acquisition	Desirable
Experience with mouse pre-clinical models	Desirable

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## About our organisation

The Institute of Cancer Research, London, is one of the world's most influential cancer research institutions with an outstanding track record of achievement dating back more than 100 years. Our mission is to make the discoveries that defeat cancer.

As well as being one of the UK's leading higher education institutions in research quality and impact, the ICR is consistently ranked as one of the world's most successful for industry collaboration. As a member institution of the University of London, we also provide postgraduate higher education of international distinction.

We are also a charity and rely on the support of partner organisations, funders, donors and the general public.

**Read more** to find out about our history, culture, and achievements, and how our funders, supporters and partnerships help drive our work.

## 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'.



***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

