

Senior Laboratory Research Scientist - Protein Expression, Purification and Characterization

Reports to: Deputy Head, Structural Biology Science Technology Platform (SB STP)

This is a full-time, 4-year, fixed-term position on Crick Terms and Conditions of Employment.

OVERVIEW

The Francis Crick Institute seeks to recruit a protein scientist to support institute-wide projects relating to generation and application of recombinant proteins.

The successful candidate will be part of the Structural Biology Science Technology Platform (<https://www.crick.ac.uk/research/science-technology-platforms/structural-biology>), which is one of 14 STPs at the Francis Crick Institute. The STPs support research groups with expertise and services in areas that are complementary to the research group's core activities. The SB STP, comprising 17 members at full complement, interacts with a number of Crick research groups in the fields of protein expression and purification, protein biophysics and structural biology (X-ray crystallography and Cryo-EM).

SUMMARY

The Expression and Purification node of the SB STP supports and collaborates with end-users in a variety of aspects of protein-based research in a lab equipped with state-of-the-art equipment. We are looking for an enthusiastic and self-driven protein scientist to work on short (e.g. delivery of characterized baculovirus) and long-term (e.g. establish the expression and purification of "difficult" proteins using different expression systems) projects in a dynamic environment with scope for learning and implementation of new methods and techniques, and for technology development, depending on the demands from users.

KEY RESPONSIBILITIES

These include but are not limited to;

- Generation and characterization of recombinant baculovirus
- Protein expression using transient or stable expression in mammalian cells
- Small and large-scale protein expression, using Bioreactors (Minifors and Wavebag technology) or shaker-flasks
- Protein purification using automated AKTA Pure workstations with a suite of chromatographic techniques (affinity, ion-exchange, size-exclusion)
- Protein analysis and quality control using SDS-PAGE, Western blotting, Thermal melts and mass-spec ID
- Contribute to smooth running of the lab by organising databases, providing reports and project updates
- Interact with users (PhD-students, Post-docs and research group staff members) to discuss troubleshooting, project strategies and project updates

ABOUT US

The Francis Crick Institute is a biomedical discovery institute dedicated to understanding the fundamental biology underlying health and disease. Its work is helping to understand why disease develops and to translate discoveries into new ways to prevent, diagnose and treat illnesses such as cancer, heart disease, stroke, infections, and neurodegenerative diseases.

An independent organisation, its founding partners are the Medical Research Council (MRC), Cancer Research UK, Wellcome, UCL (University College London), Imperial College London and King's College London.

The Crick was formed in 2015, and in 2016 it moved into a brand new state-of-the-art building in central London which brings together 1500 scientists and support staff working collaboratively across disciplines, making it the biggest biomedical research facility under a single roof in Europe.

The Francis Crick Institute will be world-class with a strong national role. Its distinctive vision for excellence includes commitments to collaboration; to developing emerging talent and exporting it the rest of the UK; to public engagement; and to helping turn discoveries into treatments as quickly as possible to improve lives and strengthen the economy.

KEY EXPERIENCE AND COMPETENCIES

The post holder should embody and demonstrate our core Crick values: Bold, Imaginative, Open, Dynamic and Collegial, in addition to the following:

Essential:

- Ph.D. or relevant degree with sound lab-experience, in molecular biology/biochemistry/cell biology/structural biology
- Excellent theoretical background in subjects relating to protein expression (protein biochemistry, structure and function)
- Solid hands-on experience in protein expression and purification using prokaryotic (*E. coli*) and eukaryotic hosts (insect and mammalian cells) with a desired emphasis on mammalian cell-based systems and optimization thereof. Experience with other expression systems such as yeast or cell-free expression will be advantageous
- Experience with quality control assessment and assays (Thermofluor, SEC-MALLS, enzymatic assays)
- Good organizational skills with a strong attention to detail
- Ability to work and prioritize projects independently and be able to meet deadlines
- Enthusiasm for science and technology

Desirable:

- Knowledge of X-ray crystallography, and/or other methods for determination of protein structures
- Knowledge of methods for generation and modification of simple and more advanced (multi-protein expression) DNA constructs
- Experience with high-throughput protein expression
- Experience with biophysical methods of protein characterization (affinity determination) such as Biolayer Interferometry (Octet), Microscale Thermophoresis (Nanotemper), Isothermal Calorimetry and Surface Plasmon Resonance (BiaCore)
- Good interpersonal skills in order to interact with Crick scientists from a wide range of different scientific backgrounds as well as being part of the SB STP team

Other:

- Excellent communication and presentation skills
- IT-literacy

For any questions, please contact us on jobs@crick.ac.uk or the Dr Svend Kjær, svend.kjaer@crick.ac.uk.

Please note: all offers of employment are subject to successful security screening and continuous eligibility to work in the United Kingdom.