



Candidate Information

Position:	Research Fellow
School/Department:	The Wellcome-Wolfson Institute for Experimental Medicine
Reference:	23/111069
Closing Date:	Monday 7 August 2023
Salary:	£36,333 per annum
Anticipated Interview Date:	Monday 21 August 2023
Duration:	Fixed Term for 36 months available from 1 October 2023 to 30 September 2026.

JOB PURPOSE:

This position is for a postdoctoral researcher to work on a 3-year MRC-funded project to uncover the role of specific host proteins in rhinovirus replication, in a team led by Dr Aurelie Mousnier within the Wellcome-Wolfson Institute for Experimental Medicine. The team studies how rhinoviruses replicate in host cells, particularly focussing on the mechanisms by which host proteins enable the replication of these viruses. We identified specific host proteins that interact with rhinovirus non-structural proteins in infected cells and play an important role in the replication of the virus. This project will investigate the precise molecular mechanisms involved and validate key results in a human airway epithelium model. It will involve a range of virology and molecular cell biology/biochemistry techniques.

The successful applicant will have responsibilities in independent research, supervision, planning, day-to-day lab management, collaborations and presentation of the work. This position is suited to a meticulous, highly productive and collaborative individual, strongly driven to decipher the molecular mechanisms by which rhinoviruses replicate in host cells and comfortable with setting up new assays and techniques.

Applicants should clearly demonstrate how they meet the stipulated essential qualifications and experience within their CV. The position is available for 3 years from 01/10/2023, during which the successful candidate will have the opportunity to develop a wide range of skills.

MAJOR DUTIES:

1. Develop, plan and deliver research under Dr Mousnier's supervision aimed at understanding the molecular mechanisms by which rhinoviruses replicate in host cells and the specific role of cellular host factors in this process.
2. Acquire and maintain up-to-date knowledge of the field of research and associated techniques and communicate this knowledge to the group. Where necessary, undergo training in relevant skills and techniques.
3. Carry out experiments, in consultation with Dr Mousnier, to generate data for publications and funding proposals, in a timely and rigorous manner and within budget. Lab work should be done in compliance with excellent scientific standards and appropriate health and safety rules.
4. Set up, optimise and develop, in consultation with Dr Mousnier, new or improved methods and techniques to meet the requirements of the project.
5. Prepare and maintain clear laboratory records of methods, sample details and results, in lab books and appropriate electronic forms and databases.
6. Carry out analyses, critical evaluations and interpretations of experimental data and the literature, using appropriate methodologies.
7. Present regular progress reports on research to Dr Mousnier and members of the research group, other groups within the Institute/University, and to external audiences to disseminate and publicise research findings.
8. Prepare, in consultation with Dr Mousnier, figures and material for project progress reports, publications, presentations at conferences and funding applications.
9. Carry out routine tasks associated with the day-to-day running of the research group in a communal lab setting.

10. Carry out routine administrative tasks associated with the research of the group to ensure that projects are completed on time and within budget and that the group functions efficiently. These might include stock management/procurement, financial control, risk assessment of research activities, development of SOPs and organisation of project/lab documentation.
11. Train and supervise students and other members of the group for their related research project, as required and discussed with Dr Mousnier.
12. Participate in local research-related activities such as lab meetings, journal clubs, training sessions, seminars, symposiums etc.
13. Carry out additional research and/or laboratory related duties appropriate to the post, as may be reasonably requested by Dr Mousnier.

ESSENTIAL CRITERIA:

1. Have or about to obtain (by 01/10/2023) a PhD in virology or molecular cell biology, or a closely related area.
2. Significant and recent hands-on research experience in a range of virology and molecular cell biology techniques that include each of the following:
 1. Virology techniques: infection of mammalian cell cultures with animal viruses and viral titrations.
 2. Molecular biology techniques: PCR, RT-qPCR, Western blot, immunoprecipitation, molecular cloning, site-directed mutagenesis, DNA/RNA purification, in vitro transcription.
 3. Cell biology techniques: cell culture, RNA/siRNA/plasmid transfections, immunofluorescent staining, confocal microscopy, fluorescent or luminescent assays using a plate reader.
 4. Experience in setting up and optimizing new assays/techniques.
3. Experience in training/supervising other group members in the laboratory, including postgraduate/undergraduate students.
4. Ability to teach procedures with clarity.
5. Experience in meticulously planning experiments.
6. Experience in keeping detailed and accurate records of protocols, experiments and materials.
7. Experience in efficiently organising and managing materials in the lab and contributing to communal tasks.
8. Ability to carry out experiments to a consistently high standard.
9. Ability to plan and conduct lab work in the most effective way by conducting several experiments in parallel and efficiently delivering publishable result.
10. Competent in maintaining cutting-edge knowledge of field of expertise.
11. Experience of laboratory practice and handling of biosafety level 2 viruses.
12. Well-developed understanding of relevant Health and Safety requirements and procedures.
13. Competent in giving effective and informative oral and poster presentations, as well as written reports.
14. Competent in communicating stipulated research skills essential to the post in CV/ application/interview.
15. Demonstrable intellectual ability.
16. Highly motivated, efficient and organised.
17. Show an interest and commitment to the research topic.
18. Ability to work independently and from own initiative.
19. Excellent team working skills.
20. Excellent analytical and problem-solving skills.
21. Must be open to work irregular hours, including evening, weekend and other out-of-hours, as this will be a component of the research at times.
22. Must be willing to travel to national and international meetings and collaborative laboratories.

DESIRABLE CRITERIA:

1. Have a PhD on the interaction between positive-sense RNA viruses and host cells.
2. Experience in:
 - Working with picornaviruses.
 - Culturing primary airway epithelial cells and differentiating them.
 - Preparing samples for analysis by mass spectrometry.
 - Protein purification.
 - Yeast two-hybrid.
3. Experience in research project management.
4. Experience in ordering materials.
5. Experience in respiratory virus laboratory practice and handling.