Post-doctoral Scientist in Liver Metabolism and NAFLD
(Ref: RS50)

Job Description

Post title:	**Post-doctoral Scientist**
Salary range:	£ 36,379 - £38,864
Location:	The Roger Williams Institute of Hepatology Foundation for Liver Research, 111 Coldharbour Lane, London, SE5 9NT
Responsible to:	Prof Michele Vacca, Principal Investigator Liver Metabolism and NAFLD Group
Duration:	The post will be funded for 3 years in the first instance

Closing date for applications: 5pm Friday 12th August 2022

Background:

The post holder will join the Roger Williams Institute of Hepatology (IoH), which is owned and core funded by the Foundation for Liver Research (FLR) (RCN1134579). The successful applicant will participate to the research activities of the recently established "Liver Metabolism and NAFLD group" (PI Prof. Michele Vacca).

Obesity, Metabolic Syndrome (MetS) and Non Alcoholic Fatty Liver (NAFLD) are modern epidemics that are quickly becoming public health burdens due to a high morbidity/mortality associated to the risk of cirrhosis, cardiovascular disease and Hepatocellular Carcinoma (HCC). A pivotal role in NAFLD pathophysiology is exerted by lifestyles, genetic predisposition, adipose tissue disfunction and impaired lipoprotein metabolism; moreover hepatic/systemic metabolism also affect HCC biology and response to treatment.

Using an integrated system biology/translational approach also implying the development of sophisticated (multi-)organ on chip methods, the successful candidate will play a pivotal role in a program aimed to mechanistically study the consequences of impaired lipid metabolism on NAFLD/HCC. These activities will generate novel methods as well as actionable knowledge on NAFLD/HCC pathophysiology with the final aim to identify/validate targets for pharmacological studies able to interfere with NASH/HCC natural history.

The Foundation for Liver Research is therefore seeking an enthusiastic, flexible and committed scientist with a strong background in cell culture and molecular biology to explore the role of hepatic/systemic metabolism in NAFLD and NASH-HCC in advanced multi-organ cell culture systems.

Applications are invited from postdoctoral scientists with a proven scientific interest and publication track record in this area. The post holder will be required to proactively design and run experiments; record, analyse and publish in high impact peer reviewed journals, and participate in educational programmes within the Institute.

The following skills and attributes are required for the post-doctoral position:

Essential skills:

- PhD in hepatology (Focus: NAFLD, chronic liver disease, liver regeneration, HCC) or in NAFLD-related discipline (Endocrinology, AT biology)
- Advanced hands-on experience with hepatic cells isolation/culture methods:
    - Human/Murine primary liver cells (hepatocytes, stellate/Kupfer/biliary cells, and/or HCC) isolation and culture
    - Liver cell lines
    - Trans-well co-culture assays
- Hands-on experience with genetic manipulation of cells (e.g. shRNA/miRNA, ADV/AAV/Lenti, and/or CrispR/Cas9)
- Hands-on experience with molecular/cell biology:
    - DNA/RNA extraction/analyses (qPCR/NGS/SNPs)
    - Protein extraction/analysis (WB, ELISA)
- Hands-on experience with immunofluorescence and immunohistochemistry
- Excellent organisation skills and the ability to work independently
- Experience of supervising/training junior staff or students
- Proven ability to work with colleagues and initiate multi-disciplinary projects
- Ability to prepare data for publication including statistical analysis
- Ability to present research findings at internal, national and international meetings
- Good publication record in leading peer-reviewed journals with focus on
    - Methods development (in vitro models of liver disease/NAFLD)
    - Obesity/NAFLD pathophysiology (Translational, pre-clinical studies)
- Previous experience in preparation and submission of research grants
- Good interpersonal skills that demonstrate the ability to establish and maintain effective working relationships with students, staff, peers and management
- Commitment to Health and Safety

Desirable skills:

- Advanced 3D culturing methods (organs of chip, or organoids) and/or NAFLD models in a dish
- Experience with rodent models of NAFLD and/or HCC
- Excellent communication skills in English
- Hands-on experience in cell-culture of:
    - Gut/adipocytes cells (Primary or Cell Lines)
    - Stem-cells derived liver cells
- Experience with Seahorse Real-Time Cell Metabolic Analysis
- Experience of cross-discipline and industry collaboration
- Experience of working with, processing and analysing next-generation sequencing data (including bioinformatic analyses)
- Multi-plex analyses

The appointee will be expected:

- To design, set-up and run experiments in relation to the project after consultation with the Principal Investigator to effectively record, analyse, acquire and write-up results for publications
- To develop, implement and perform advanced multi-organ 3D cell culture experiments to model Obesity and NAFLD using advanced multi-organ-on-chip technologies
- To independently process biological samples in accordance with standard operating protocols
    - Isolate, process, cryopreserve biological samples (liver/inflammatory cells/adipocytes) from patients with fatty liver

    - To genetically manipulate liver cells to generate viable stable/inducible clones;
    - To perform laboratory-based molecular/cell biology assays on biological (cell, murine, human) samples
- To liaise, assist and interact with group members to perform and optimise laboratory-based assays including setting up experiments and preparing reagents
- Contribute to internal meetings and external national and international hepatology meetings
- First draft manuscript write-up of methodology and results for publications
- Contribute to the preparation and drafting of research bids and proposals
- Provide training, support and advice to graduates, research technicians and associates
- Participate in collaborative research projects
- Undertake GCP and HTA training to facilitate appropriate interaction with hospital staff and patient participants from who research samples are derived
- Publish research findings in peer-reviewed international journals
- Contribute to overall activities of the Institute
- Any other duties commensurate with the grading of the post as required by the Principal Investigator, Chief Scientific Officer and Director

The post is funded for an initial period of three years. As part of the appointment in the IoH, the appointee will be nominated for a visiting contract with King's College London.

Informal enquiries should be made to:

Vacca, Michele **m.vacca@researchinliver.org.uk**
Principal Investigator - Liver Metabolism and NAFLD Group
Foundation for Liver Research & University of Bari

To apply for this post please send a 1-page covering letter explaining your background and suitability for our team, together with a detailed CV describing your research experience to date and including names and contact details of two referees, one of whom is the current/most recent employer, to:

Natalie Day, Chief Executive
Institute of Hepatology, London
111 Coldharbour Lane, London SE5 9NT
n.day@researchinliver.org.uk

Please quote Job Ref: RS50

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In the event that you are invited for interview we will contact you by email confirming the arrangements. Interviews will be in the week commencing 22nd August. At interview candidates will be expected to give a short presentation summarising their research achievements to date and outlining possible research directions.