



FPI 2021 Call for Candidates Ph.D. Student Position Available

HCV and Related Virus Laboratory at the CNB-CSIC (Madrid, Spain)

The HCV and Related Virus Laboratory and the CNB (PI: Pablo Gastaminza Landart) studies pathogenic human viral infections, and focuses on understanding the molecular basis of viral pathogenesis and identifying new molecular targets for antiviral therapy. Our final aim is to propose new therapeutic approaches for antiviral treatment and for reversion of virus-induced pathogenesis. To achieve these general aims, we have implemented cell culture models for infection by hepatitis C virus and other members of the *Flaviviridae* family such as dengue, Zika and West Nile viruses. Given the current health emergency due the COVID-19 pandemic, we have also implemented cell culture models of infection by SARS-CoV-2 coronavirus, including a compound screening platform for antiviral drug discovery.

We are looking for highly motivated young researchers interested in carrying out their training in an excellent research environment within the following project:

The sigma-1 receptor protein (SIGMAR1) is an integral ER membrane protein, particularly concentrated in mitochondria-associated ER membranes (MAMs) and lipid droplets. SIGMAR1 expression is rate-limiting for HCV, dengue, Zika and SARS-CoV-2 infection. The candidate will be studying this host factor to pull the thread on deciphering common molecular mechanisms involved in rate-limiting steps of infection by a broad range of human pathogens. This plan also considers the benefit of using viruses as molecular probes to study basic aspects of other aspects SIGMAR1 cell biology, a genetic determinant of biomedically relevant neurodegenerative diseases.

The project is highly interdisciplinary combining virology, cell biology approaches with advanced microscopy techniques, biochemistry and proteomics.

Our group offers a **48-month contract at the CNB-CSIC**. The CNB is part of the “Severo Ochoa” Programme for Centres Of Excellence and has a specific Ph.D. Training Advisory Committee, which serve as first-line contact persons for PhD students. The CNB has a specific Ph.D. training program that involves Master classes on scientific writing, experimental planning, etc.. (<http://www.cnb.csic.es/index.php/en/jobs-training/phd-training>). Numerous courses are available at the CNB some of which the candidate may benefit from. The CNB organizes seminars by external speakers selected by the different Departments as well as by a Junior Seminar Committee in which the Ph.D. Students have the chance to selecting international experts for the talks.

Candidates may contact the Principal Investigator via email (pgastaminza@cnb.csic.es) providing a CV and motivation letter and consider applying to the **FPI2021 Program** before the official deadline.

Relevant Publications from the group:

Differential Roles of Lipin1 and Lipin2 in the Hepatitis C Virus Replication Cycle.
Cells. 2019 Nov 18;8(11):1456. doi: 10.3390/cells8111456.

Host Phosphatidic Acid Phosphatase Lipin1 Is Rate Limiting For Functional Hepatitis C Virus Replicase Complex Formation
PLoS Pathog. 2018 Sep 18;14(9):e1007284. doi: 10.1371/journal.ppat.1007284. eCollection 2018 Sep.

Structural Changes In Cells Imaged by Soft X-Ray Cryo-Tomography During Hepatitis C Virus Infection.
ACS Nano. 2016 Jun 21. [Epub ahead of print] PubMed PMID: 27328170.

Cellular stress responses in hepatitis C virus infection: Mastering a two-edged sword.
Virus Res. 2015 Mar 30. pii: S0168-1702(15)00131-8. doi: 10.1016/j.virusres.2015.03.013. Review. PubMed PMID: 25836277.

Sigma-1 Receptor Regulates Early Steps Of Viral RNA Replication At The Onset Of Hepatitis C Virus Infection.
J Virol. 2013 Mar 27. [Epub ahead of print]. PMID: 23536676