Post-doctoral contract

The Department of Global Health, **Lyssavirus, Epidemiology and Neuropathology laboratory** (LyEN, Institut Pasteur, Paris) is seeking to appoint a post-doctoral research scientist to work in Professor Hervé Bourhy's dynamic and productive research laboratory at Institut Pasteur.

The successful candidate will develop versatile tools allowing to decipher the infectious mechanisms leading to Post-acute COVID-19 Syndrome (PACS).

COVID-19, a disease caused by SARS-CoV-2, is now widespread on all continents, represents a major public health issue and affects all socio-economic spheres of the planet. Symptoms of COVID19 can range from a mild upper respiratory infection to bilateral pneumonia with acute respiratory distress syndrome and multiple organ failure. While in the majority of cases the signs of the disease disappear within 2 to 3 weeks, some patients may still have symptoms beyond 4 weeks after infection. These long-term consequences, also named "long COVID" represent one of the poorly understood consequences of COVID-19, with in particular neurological implications of varying duration. This should be considered a public health emergency as these people often live with cognitive, psychological, and physical sequelae months after recovery and discharge, despite of intense rehabilitation, with a significant impact on quality of life. Different hypotheses on the etiology of long COVID are made (viral persistence, alteration of immune responses, impact of the infection on the central nervous system) but no proof could be provided. The objective of our research is the development of *in vivo* and *in vitro* models of long COVID that will help us to answer some of these questions.

This exciting and challenging project will require multidisciplinary approaches. The candidate will develop:
(i)   a reverse genetics system allowing the understanding of the functions encoded by the viral genome, the study of the impact of the mutations observed in the different variants or the carrying out of imaging of the infection;
(ii)   a Hamster animal model to test the pathogenesis of recombinant viruses produced by reverse genetics or to test therapeutic molecules;
(iii) an *in vivo* and *in vitro* model of long COVID. All of these tools will make it possible to study host-pathogen interactions in the context of acute infections leading to long COVIDs.

A 12-month renewable position (maximum duration 2 years) is available now to accommodate a junior post-doctoral fellow. This contract is part of the SARS-CoV-2 and COVID-19 research projects "PRF1 Reverse genetics of SARS-CoV-2" and "PRF4 COVID-long" funded by the Institut Pasteur. Institut Pasteur is an international and dynamic research environment and the candidate will appreciate all the scientific and technological structures with which she / he will be able to interact with.

Highly motivated, flexible, curious and enthusiastic applicants are strongly encouraged to apply. A solid background in virology and molecular biology is required with some experience in culturing primary neural cells and in animal models.

The candidate will be affiliated to the LyEN unit but will interact with several units from different departments. The salary will be defined according to the salary scales of the Institut Pasteur.

Please send a cover letter describing past research achievements / training and future research interests, a CV including the list of publications and contact details of 2 reference persons and 2 reference letters to florence.larrous@pasteur.fr and guilherme.dias-de-melo@pasteur.fr

----

de Melo GD, Lazarini F, Levallois S, Hautefort C, Michel V, Larrous F, Verillaud B, Aparicio C, Wagner S, Gheusi G, Kergoat L, Kornobis E, Donati F, Cokelaer T, Hervochon R, Madec Y, Roze E, Salmon D, Bourhy H, Lecuit M, Lledo PM. COVID-19-related anosmia is associated with viral persistence and inflammation in human olfactory epithelium and brain infection in hamsters. Sci Transl Med. 2021 Jun 2;13(596):eabf8396. doi: 10.1126/scitranslmed.abf8396.

Fondation reconnue d'utilité publique habilitée à recevoir dons et legs

25-28 rue du Docteur Roux
75724 Paris Cedex 15
www.pasteur.fr