



POSTDOCTORAL POSITION 2 YEARS in the Repair & Aging Team @ CEA Paris-Saclay (FAR) on Nuclear envelope, Telomeres & Tumorigenesis

Job Information

- Organization: CEA, Institute Jacob/iRCM/U1274 Inserm Unit, Fontenay-aux-Roses (FAR), FRANCE
- Team: Laboratory of Aging and Repair (LREV), Dr. Pascale Bertrand
- Starting date: January 2025 (flexible)
- Duration: 24 months, full-time
- Funding: INSERM (INCA-funded project)

Offer description

The LREV team is interested in understanding: 1) Genome maintenance mechanisms (DNA repair, senescence, telomere stability) in relation to the architecture of the nuclear envelope; 2) Biological responses to ionizing radiation (repair, oxidative stress, replicative stress, inflammation, immune cell death). Our projects aim to investigate the mechanisms involved in tumorigenesis related to the nuclear envelope, telomeres and DNA repair, as well as the response mechanisms to radiotherapy and to propose new therapeutic strategies.

The Post-doctoral project will focus on understanding how dysregulation of lamin B1, a major component of the nuclear envelope, can contribute to genomic instability and progression of tumorigenesis. Indeed, an alteration in the level of lamin B1 is observed in various cancers. The consequences of this alteration on chromosomal stability and tumorigenesis remain poorly understood. We have shown that lamin B1 overexpression triggers telomere instability by interfering with the shelterin, a protein complex that caps and safeguards telomeres. We recently discovered that lamin B1 directly interacts with the shelterin. We now aim to decipher the physiological roles of this interaction in different cellular models and analyze the consequences of its deregulation on cell fate in terms of genomic instability and tumor growth. This is a translational research program, from human primary culture and tumor cells derived from patients to tumor models, which combines cutting-edge cellular and molecular biology approaches such as molecular cytogenetics (FISH, multi-FISH), ChIP experiments, imaging, DNA-combing (SMARD). We are looking for a talented and highly motivated post-doc with a solid experience in cellular and molecular biology to address these questions.

References

Pennarun *et al.* 2021 **Nucl Acids Res.** doi: 10.1093/nar/gkab761. PMID: **34469544** ; Pennarun *et al.* 2023 **Genes.** doi: 10.3390/genes14040775. PMID: **37107534** ; Etourneau *et al.* 2021. **Sci Adv.** doi: 10.1126/sciadv.abb3799. PMID: **34452908**

Candidate Profile

- PhD degree in molecular biology, cell biology, genetics and/or a related field
- Strong expertise and skills in molecular biology, cellular biology, and cell cultures are required.
- Good knowledges in DNA repair, telomere, cancer research fields will be greatly appreciated.
- Language skills: very good level in English

How to apply ?

Please send your CV including references, a list of publications and a motivation letter to:

Gaëlle Pennarun : gaelle.pennarun@cea.fr

& Pascale Bertrand : pascale.bertrand@cea.fr

Please, do not hesitate to contact us for more details.

Location of the position:

CEA Fontenay aux roses, Institut Jacob, iRCM, LREV
Address : site IRSN, 31 avenue de la Division Leclerc, Bât 05,
3^{ème} étage - 92260 Fontenay-aux-Roses ;
Tram T6 (Division Leclerc); 30 min from downtown Paris

Host Institute

The Institute of cellular and molecular radiobiology (IRCM) develops basic and applied research on DNA repair mechanisms and genome stability maintenance, tissue regeneration and cancer. It aims to decipher the molecular, cellular and tissular effects of ionizing radiation and the development of associated pathologies in order to improve their prevention, diagnosis and/or treatment. Its major goal is to propose new strategies to improve cancer treatment by increasing the efficiency of radiotherapy and preserving healthy tissues. The iRCM, within the F. Jacob Institute, provides an excellent scientific environment with over 150 staff members in 15 laboratories affiliated to the CEA, Inserm, Universities Paris Cité & Paris-Saclay and state-of-the-art facilities for light microscopy, animal experimentation, cytogenetic, cytometry and cell sorting, irradiation, genetic engineering and protein biochemistry.

<https://jacob.cea.fr/drj/francoisjacob/Pages/Departements/IRCM/IRCM.aspx>