

CDD - IR in Molecular Biology

Description of the post :

Ingénieur(e) de Recherche in Cell and Molecular Biology

Padmanabhan Group, Molecular and Epigenetic regulation of Biological rhythms.

<http://igfl.ens-lyon.fr/equipes/k-padmanabhan-molecular-and-epigenetic-regulation-of-biological-clocks>

Location: IGFL, ENS Lyon, 32-34 Ave Tony Garnier, 69007 Lyon.

Duration of contract - 12 months (with a possible extension for another 12 months)

Start date : Spring 2018

Our research: Our lab studies epigenetic mechanisms underlying biological oscillators, especially those that help establish and operate mammalian circadian clocks. We are investigating the role of histone variants – key epigenetic factors that control transcriptional outputs by regulating chromatin structure – in the context of the clock. We are particularly interested in how de-regulation of the clock-chromatin network has an impact on metabolism and physiology especially in the context of malignancy.

Our methods: Our lab uses an integrative approach to the problem at hand. We use proteomics and genomic approaches to i) characterize clock protein complex dynamics on chromatin and ii) study the impact of a 'clockless state' on the epigenome and transcriptome. Conversely, we are exploring the effect of loss of epigenetic marks on 24hr transcriptional rhythms in murine tissues and physiology using conditional mouse models. We also study circadian phenomena by imaging clocks in real-time in live mice, in isolated tissues and cells, under normal environmental conditions or following perturbations of rhythms.

Role

Conduct and adapt experiments as required with demonstrated skills in

- 1) **Molecular biology** including (but not limited to) handling nucleic acids, cloning, immunoprecipitation and blots). Experience in epigenetics and chromatin biology will be important for the project.
- 2) **Cell Biology** including (but not limited to) cell culture, engineering stable cell lines, epifluorescence, FACS. Experience in stem cell biology will be a big plus.
- 3) **Experience with mammalian systems is necessary** and mouse models will be an added plus.
- 4) **NGS** data analysis and interpretation. Transcriptomics, bioinformatics and statistical analytical skills will be important for the project.

Operational Competence

- Design and develop experiments (Suggest technical options, evaluate, validate choices)
- Present findings in departmental seminars, participate in grant writing.
- Train students and lab organization.
- Spoken English level B2+

Person to contact: Kiran Padmanabhan Email: kiran.padmanabhan@ens-lyon.fr

Please send a CV, motivation letter and contact information for referees.