Post-doc position at the DNA repair and Uveal Melanoma team (F/M)

The hosting structure

The Curie Institute Research Center
The Institut Curie is a major player in the research and fight against cancer. It consists of a hospital and a Research Center of more than 1000 employees with a strong international representativeness. The objective of the Institut Curie Research Center is to develop basic research and to use the knowledge produced to improve the diagnosis, prognosis, and therapeutics of cancers as part of the continuum between basic research and innovation serving the patient.

Context

Laboratory

The DNA Repair and Uveal Melanoma (D.R.U.M.) team (https://curie.fr/equipe/sterne), Inserm U830 at the Institut Curie, Paris, works on the genetics and genomics of primary and metastatic Uveal melanoma (UM). UM is the most common eye cancer in adults. Despite improved treatment of the primary tumor, effective treatment of metastatic disease is limited, and approximately half of patients die within one year following metastases detection [1]. The team aims to understand the mechanisms triggering uveal melanoma and to develop new therapeutic strategies. Our laboratory combines molecular and cellular biology, as well as bioinformatics approaches to understand the genetic mechanisms triggering uveal melanoma onset and the genotype to phenotype relationships. Ultimately, these findings are transferred in clinics for diagnostic, prognostication and therapeutic purposes [2-8].

The project

Recently, our team made pivotal discoveries in the understanding of the UM genetic. Notably, we clarified the genetic background explaining UM, identifying MBD4 as a new predisposing gene, and defining by genome-wide association studies (GWAS) frequent variants accounting for the particular epidemiology of the disease [9-13]. Furthermore, each different risk locus (namely IRF4 and HERC2) favors exclusively one sub-type of UM tumor (namely low-risk disomy 3 [SF3B1(EIF1AX-mutated)] and high-risk monosomy 3 [BAP1-mutated], respectively). How these genetic background influence UM malignant transformation is yet fully unknown.

The goal of this project is to test how IRF4 and HERC2 variants may restrict the choice of the oncogenic drivers (among SF3B1, EIF1AX and BAP1) capable of transforming normal uveal melanocytes into UM and ultimately influences oncogenic pathways and the disease outcome.

The candidate will:

1. generate cellular models reconstituting in vitro the malignant processes from normal human uveal melanocytes, by genomic manipulations (lentivirus infection, CRISPR/cas9)
2. characterize normal uveal melanocytes and their different isogenic derivatives obtained after in vitro transformation. This characterization will include state-of-the-art ‘omics’ approaches to identify altered pathways (DNA-seq, transcriptome and epigenetic marks).
3. Define the biological features of established cell lines to address their malignancy properties and understand the cellular mechanisms driving UM.
The candidate will work in strong collaboration with two engineers and in cooperation with the different core facilities of Institut Curie.

References

Candidate profile

Training and Skills required
The applicant should hold a PhD in biology and be trained in cellular and molecular techniques with a good publication record in related fields. Knowledge in cancer biology and in genetics will be highly appreciated.

Candidate profile

- Cellular Biology: cell culture, transfection, infection and genome editing (CRISPR/Cas9 experience would be appreciated), cellular characterization (proliferation, apoptosis, clonogenicity, invasion properties,...).
- Molecular biology: qPCR, DNA and RNA extraction, cloning, Sanger sequence analysis.
- Experience in -omic data analyses (RNAseq, DNAseq, ChIPseq,...) will represent a plus.
- Good level in English (reading, writing and speaking) and communication skill.
- Computer skills: common office (Word, Excel...) and laboratory softwares (Graphpad, Serial cloner or equivalent).
- High team working skill.
- High standards of integrity and accuracy.

All our opportunities are open to people with disabilities.

Contract information

Type of contract: Fixed-term contract.
Starting date: Sept 2023
Duration: 2 years, can be extended by 2 more years to a total of 4 years
**Working time:** full time

**Remuneration:** according to the current grids

**Benefits:** Collective catering, reimbursement of transportation fees up to 70%, supplementary health insurance

**Location of the position:** Paris

**Reference:** 2023-08-U830-POSTDOCT01

*The remuneration will follow the rules of the Research Center and will depend on the experience of the candidates*

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**Contact**

Please send your CV, cover letter and 2 references to: job-ref-it0zkdctg5@emploi.beetween.com.

*Publication date: August 4th, 2023*

*Deadline for applications: September 8th, 2023*

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