

Postdoctoral fellow in cancer biology

General Information

Contract duration CDD 12 months Tentative start date: 01/10/24
 Extension possible : YES NO

Salary From 2939 € / month commensurate with experience

Job Description

About the team The "Adhesion and Signaling in Metastatic Melanoma" research team is committed to uncovering new vulnerabilities of cancer cells through a better understanding of the mechanisms of tumor initiation and progression. Hyperactivation of the MAPK pathway is responsible for melanoma formation and development. Targeted therapies that block this pathway have demonstrated clinical efficacy, but their impact is limited by the development of resistance. Identifying new targets in this pathway could thus improve current therapies. We have previously established the function of a little-known regulator of the MAPK pathway, SPRED1, in melanoma. More recently, we have discovered another regulator of this pathway that could represent a new vulnerability in cancer cells. However, its exact role remains to be determined. We combine mechanistic studies in human melanoma cell lines with powerful genetic manipulation techniques in zebrafish and analyses in clinical samples to investigate the role of candidate genes in the hope of developing innovative therapies against aggressive cancers. The team was created at the end of 2020, consists of 2 PhD students, 2 postdoctoral researchers and 2 research assistants, and benefits from an adequate level of funding.

Objectives The goals of this postdoctoral fellowship are to characterize the role of a novel regulator of the MAPK pathway in melanoma cell survival in vitro and in a zebrafish model, to elucidate its mode of action by mechanistic analyses in human cells, and to explore its therapeutic implications.

Main activities The successful candidate will work under the direction of the team leader, Julien Ablain, and will:

- Participate in project design;
- Develop and optimize experimental procedures;
- Perform experiments;
- Analyze and communicate data;
- Supervise students and technical staff.

The techniques used may cover all areas of genetics, cellular and molecular biology and biochemistry. They will include genetic manipulations (RNA interference, CRISPR), transcriptomic and proteomic approaches, protein analysis (immunolabeling, Western blot, immunoprecipitation, purification), imaging (real-time and/or high-resolution confocal microscopy) and pharmacological studies in both zebrafish and human cells. The successful candidate will also implement all methods related to the use of zebrafish models.

Knowledge

- Mastery of cell culture techniques;
- Basic methods in genetics, molecular and cell biology, and biochemistry;
- Background in cancer biology appreciated;
- Training in animal experimentation preferred (but knowledge of zebrafish not required).

- Skills**
- Motivation, independence, rigor, creativity;
 - Ability to communicate and work in a team;
 - Excellent level of English (written and spoken).

Education

- PhD or equivalent

Experience

- 0-4 years. Experience in any related field: cancer biology, genetics, molecular biology, cell biology or biochemistry.

How to apply

Deadline 31/08/2024

Contact Please email motivation letter, CV and contact information of at least 2 references to julien.ablain@lyon.unicancer.fr

Relevant publications

Ablain J, Durand EM, Yang S, Zhou Y, Zon LI. A CRISPR/Cas9 Vector System for Tissue-Specific Gene Disruption in Zebrafish. *Dev Cell*. 2015 Mar 23;32(6):756-64.

Ablain J, Xu M, Rothschild H, Jordan RC, Mito JK, Daniels BH, Bell CF, Joseph NM, Wu H, Bastian BC, Zon LI, Yeh I. Human tumor genomics and zebrafish modeling identify SPRED1 loss as a driver of mucosal melanoma. *Science*. 2018 Nov 30;362(6418):1055-1060.

Ablain J, Liu S, Moriceau G, Lo RS, Zon LI. SPRED1 deletion confers resistance to MAPK inhibition in melanoma. *J Exp Med*. 2021 Mar 1;218(3):e20201097.

Al Mahi A, Ablain J. RAS pathway regulation in melanoma. *Dis Model Mech*. 2022 Feb 1;15(2):dmm049229. Review.

Ablain J*, Al Mahi A, Rothschild H, Prasad M, Aires S, Yang S, Dokukin ME, Xu S, Dang M, Sokolov I, Lian CG, Zon LI. Loss of NECTIN1 triggers melanoma dissemination upon local IGF1 depletion. *Nat Genet*. 2022 Dec;54(12):1839-1852. *: corresponding author.

Diazzi S, Ablain J. Non-epithelial tumor dissemination: specificities and challenges. *Trends Cancer*. 2023 Dec 21:S2405-8033(23)00237-6. Review.

Host Institute

About CRCL

The Cancer Research Center of Lyon (CRCL), led by Dr. Patrick Mehlen, offers a rich scientific environment focused on cancer biology, with 25 research teams and several state-of-the-art core facilities. An aquatics facility is available on the ENS Lyon site in Gerland. The proximity of the Leon Berard Comprehensive Cancer Center facilitates interactions with the clinic and encourages collaborations and translational approaches.

Team

Ablain Laboratory – Adhesion and Signaling in Metastatic Melanoma

Address

CRCL - Centre Léon Bérard - 28 rue Laennec - 69373 Lyon cedex 08 - FRANCE

Further information

www.crcl.fr

