Open post-doctoral position

Intravital correlative imaging of tumor metastasis

The Goetz lab (www.goetzlab.com) is looking for a motivated post-doctoral fellow interested in dissecting tumor metastasis using intravital correlative microscopy. The work will be performed in Strasbourg (France) under the supervision of Jacky G.Goetz, in collaboration with international experts of tumor metastasis and imaging.

Our team studies the molecular and biomechanical events underlying tumor invasion, angiogenesis and metastasis. To this end, we are using a combination of models ranging from in vitro cell biology and biophysical assays (Goetz et al., Cell, 2011) to in vivo animal models of tumor progression (mice and zebrafish) (Goetz et al., Cell Reports, 2014). In particular, we are developing intravital imaging and intravital CLEM (Correlated Light and Electron Microscopy) technologies for tracking subcellular events in vivo at high-resolution (Karreman et al. PLoS One 2014; Karreman et al., Journal of Cell Science, 2016; Karreman et al., Trends in Cell Biology, 2016). This development is performed in close collaboration with Y.SCHWAB (EMBL, Heidelberg). More recently, our team was involved in the identification of a new molecular driver of exosome biogenesis (Hyenne et al., Journal of Cell Biology, 2015).

This project aims to dissect the subcellular mechanisms underlying tumor metastasis at very high-resolution using intravital correlative microscopy. Metastasis can be considered as the end product of a multistep process where cancer cells disseminate to distant organs and home in a new tissue microenvironment. Metastases are responsible for the large majority of cancer-related deaths. However, the molecular and cellular mechanisms driving metastasis formation remain to be elucidated and better described in a realistic in vivo context. In collaboration with the team of Y.Schwab (EMBL), we recently developed a technique called intravital correlative microscopy. Here, we propose to apply the newly-developed technology to increase our understanding of tumor metastasis, in particular in terms of cell protrusivity, proteolytic activity, adaptability to local physical barriers and ability to communicate with its surrounding during the metastasis cascade.

The project involves collaboration with international teams (EMBL, DKFZ, Curie institute) and uses state-of-the-art imaging technologies and animal models. We are looking for an enthusiastic and motivated fellow (who recently defended his Ph.D), with a background in cell and cancer biology and imaging. Expertise in intravital imaging and electron microscopy will be very much appreciated.

Interested candidates should apply as soon as possible or before: 2016 October 1st

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Associated references: