

Two years postdoctoral position at Institut Jacques Monod in Paris

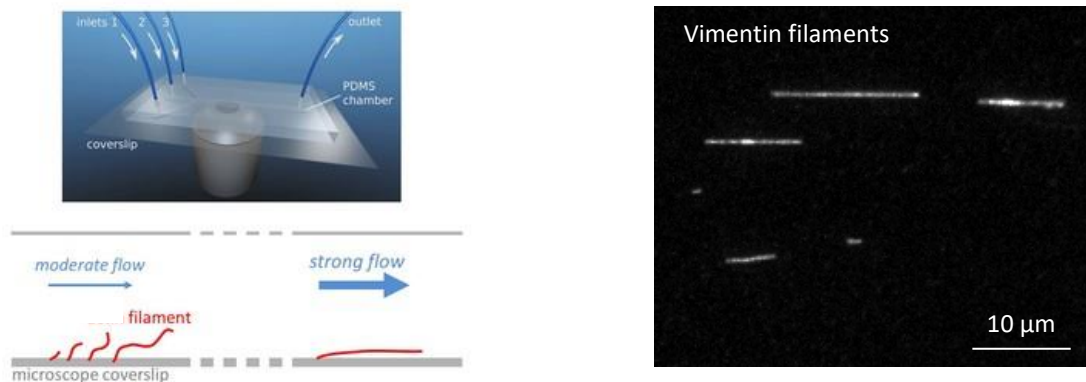
Mechanosensitivity of intermediate filaments at the single-filament level

Context

Cell mechanics is mostly governed by the cytoskeleton which is composed of three types of interconnected filaments: actin, microtubules and intermediate filaments (IFs). Although having very different mechanical and dynamical properties, actin and IF work in coordination to perform common cellular functions such as cell migration or mechano-sensitivity. However, very few studies have focused on the interaction between actin and IF at the molecular level to understand the mechanisms involved in this coordination.

Objectives

The goal of the project is to study the mechanical properties of intermediate filaments using original microfluidic approaches developed by the team, coupled with fluorescence microscopy. We will probe how filament stretching capacity is related to the subunit exchange along the filament lattice and is impacted by protein composition and post-translational modifications. We will also study the impact of filament tension on the recruitment of IF/actin crosslinkers and how this could impact the shape of IF/Actin composite networks. The studies will allow us to uncover novel molecular mechanisms involved of mechanosensing.



Recruitment

We are looking for an enthusiastic candidate with a biophysics background, who is eager to discover original experimental approaches. The position is available from March 2024 onwards and will be funded by the ANR CoCyNet grant for 24 months. The fellow will receive full support to apply for further independent postdoctoral fellowships (EMBO, Marie Curie, FRM and others). To apply, please send your CV including a list of your publications/preprints, a cover letter including the reasons why the position interests you, and two referees or more to cecile.leduc@ijm.fr.

The team

The team '[Regulation of Actin Assembly Dynamics](#)', localized at the Institut Jacques Monod in Paris, is a very dynamic, multidisciplinary team, working at the interface between biochemistry, biology, and physics. It is composed of 16 persons of 5 different nationalities.

