Séminaire

CONFÉRENCIER INVITÉ

Vendredi 12 Janvier 2018 à 11h

Salle des séminaires

Institut de biologie structurale - 71 avenue des Martyrs CS 10090 38044 Grenoble Cedex 9 - T.+33 (0)4 57 42 85 00

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par **Felix Rico**

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Laboratoire de microscopie à force atomique

Protein mechanics probed by high-speed force spectroscopy

The mechanical properties of individual proteins play a crucial role during essential cellular processes, such as migration, muscle contraction and adhesion. Thus, knowing the mechanical response at the single molecule level is important to understand biological function. Atomic force microscopy (AFM) is a unique technology that combines nanometric-imaging capabilities with piconewton force resolution. However, AFM is often limited to millisecond time scales, while many biological processes occur at faster rates. We have recently adapted high-speed AFM in force spectroscopy mode to probe protein and cell mechanics at high rates with microsecond time resolution2. We applied high-speed force spectroscopy (HS-FS) to probe protein mechanics, including single protein unfolding and receptor/ligand unbinding, at the speeds of molecular dynamics simulations. This combined approach provides an atomic description of unfolding and unbinding processes based on experimental results. We propose HS-FS as a novel tool to confirm molecular dynamics simulations and to access new biophysical regimes relevant in biological function.

Hôte : Jean-Luc Pellequer (IBS/Groupe de Microscopie Electronique et Méthodes)

L'accès au campus EPN nécessite un avis de rendez-vous

Contactez O. Cavoret (au moins 48h à l'avance) - T. 04 57 42 87 04 - email : ibs.seminaires@ibs.fr