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IDEX Université Grenoble Alpes

PhD position available in Grenoble – France

Study of the Interaction between amyloidogenic proteins and chaperones

Defects in the folding of amyloidogenic proteins such as amyloid- β peptide, α -synuclein, or islet amyloid polypeptide, can lead to the formation of fibrils and plaques in various tissues, associated with serious diseases such as Alzheimer's, Parkinson's, and type II diabetes, respectively. The aim of this project is to exploit the potential of using the chaperones to interfere with fibril formation. The student will study structure, dynamics and mechanism of hsp60 chaperone and co-chaperone in complex with amyloidogenic proteins. High field NMR spectroscopy in combination with advanced isotopic labelling will be used to study the network of interactions between the chaperones and monomeric, as well as oligomeric forms of these amyloidogenic proteins. The final goal of the project is a better understanding of how these chaperones stabilize monomeric state and prevent the formation of fibrils. Such fundamental results will serve as a basis to develop strategies based on the use of chaperones to prevent accumulation of amyloid fibrils of proteins involved in diabetes, Parkinson's and Alzheimer's diseases.

The successful candidates will be member of the [Biomolecular NMR Spectroscopy Group](#) at the Structural Biology Institute in Grenoble and will be part of a dynamic collaboration with [Heinrich Heine University of Düsseldorf](#) and [Forschungszentrum Jülich](#). He/She will have access to state-of-the-art structural biology facilities, including six high field NMR spectrometers (950 MHz, 850 MHz, 700 MHz, 3x600 MHz) equipped with latest solid-state NMR and cryogenic probes, SAXS, cryoelectron microscopy and tomography. Applicants will also have access to a fully equipped 150 m² wetlab for sample preparation using *in vivo* and *in vitro* isotopic labelling methods.

PhD applicants should hold a Master degree in Structural Biology, Physical Chemistry, Biophysics or Biochemistry. Interested candidates should send a *Curriculum Vitae*, a cover letter and contact information for two references, via e-mail to jerome.boisbouvier@ibs.fr

Application deadline July 13th 2017.

