

## PhD position (3 years)

### Development and application of advanced cell-free protein synthesis for the NMR study of large macromolecular systems

A PhD position is available in the team *Biogenesis, architecture and interactions of RNA* led by Dr. Tisné, at the Institut de biologie physico-chimique (IBPC) in Paris, France. The successful candidate will work on the development of tRNA production for innovative cell-free protein synthesis, and on the application of these innovative isotope labeling methods to relevant protein/RNA complexes. The position is funded by the European Research Council under the Advanced Grant project XXL-NMR. The successful candidate will work under the co-supervision of Dr. Barraud (IBPC, Paris) and Dr. Boisbouvier (IBS, Grenoble).

**Facilities:** The IBPC, a historic multidisciplinary institute embedded in a dense research campus, offers interaction with many experts in the field of molecular biology and at the interface with physics, chemistry and computational biology. The IBPC offers a vibrant international working environment with state-of-the-art platforms including crystallography, biophysics, NMR, mass spectrometry, data visualisation and functional genomics. The IBPC is located in the centre of Paris, in the Latin Quarter, a dynamic student area, close to historical monuments and public transport.

**Qualification:** Candidates should hold a Master degree in biology, biochemistry, biophysics, or structural biology. Expertise or interest in the development of isotope labeling methods will be highly appreciated. Interested candidates should send a CV, a covering letter and the names and email addresses of two referees. These documents should be submitted by email to [pierre.barraud@ibpc.fr](mailto:pierre.barraud@ibpc.fr) and [jerome.boisbouvier@ibs.fr](mailto:jerome.boisbouvier@ibs.fr)

#### Recent Relevant Publications of the Teams:

- Meynier et al. “Structural basis for human mitochondrial tRNA maturation”. bioRxiv (2023) doi:10.1101/2023.12.19.572246
- Yared et al. “Different modification pathways for m1A58 incorporation in yeast elongator and initiator tRNAs”. Nucleic Acids Res (2023) doi:10.1093/nar/gkad722
- Elena-Real et al. “Site-Specific Introduction of Alanines for the Nuclear Magnetic Resonance Investigation of Low-Complexity Regions and Large Biomolecular Assemblies”. ACS Chemical Biology (2023). doi:10.1021/acscchembio.3c00288
- Henot et al. “Visualizing the Transiently Populated Closed-State of Human HSP90 ATP Binding Domain”. Nature Communications (2022). doi:10.1038/s41467-022-35399-8
- Törner et al. “Structural Basis for the Inhibition of IAPP Fibril Formation by the Co-Chaperonin Prefoldin”. Nature Communications (2022). doi:10.1038/s41467-022-30042-y
- Barraud et al. “Time-resolved NMR monitoring of tRNA maturation”. Nature Communications (2019) doi:10.1038/s41467-019-11356-w
- Gauto et al. “Integrated NMR and cryo-EM atomic-resolution structure determination of a half-megadalton enzyme complex”. Nature Communications (2019). doi:10.1038/s41467-019-10490-9