

## Ph.D. contract at the Protein Folding and Conformational Diseases Lab at the UAB

The Protein Folding and Conformational Diseases Lab at the Institut de Biotecnologia i de Biomedicina of the Universitat Autònoma de Barcelona (UAB), led by Prof. Salvador Ventura (<https://ibb.uab.cat>), offers a Ph.D. contract (FPI, 4 years), founded by the Spanish Ministry of Science and Innovation to work in the project “**Protein Aggregation: Biomedical and Biotechnological Applications**” (PID2019-105017RB-I00).

### Research Line 1:

Protein aggregation is associated with the pathogenesis of neurodegenerative disorders. There is an urgent need for diagnostic tools and modifying therapies for these incurable diseases. This project intends to exploit our protein aggregation background to provide early diagnostic methods and therapeutic solutions for two different disorders: Parkinson's disease and the Tauopathies.

- Pujols, J. et. al. Chemical chaperones as novel drugs for Parkinson's disease. *Trends in Molecular Medicine*. 26(4):408-421 (2020).
- Pujols J, et. al. Small molecule inhibits  $\alpha$ -synuclein aggregation, disrupts amyloid fibrils, and prevents degeneration of dopaminergic neurons. *Proc Natl Acad Sci U S A*. 115(41):10481-10486 (2018)

### Research Line 2:

Despite their association with disease, the stable, hierarchical, and tuneable assembly of amyloids make them exceptional building blocks in nanotechnology, endorsing materials with properties that cannot be attained with any other organic or inorganic component. In our lab, we use protein design to develop self-assembled nanomaterials with novel functional applications, ranging from bio-catalysis to immunotherapy.

- Wang W, et. al. Prion soft amyloid core driven self-assembly of globular proteins into bioactive nanofibrils. *Nanoscale* 11(26):12680-12694 (2019)
- Díaz-Caballero M, et. al. Minimalist Prion-Inspired Polar Self-Assembling Peptides. *ACS Nano*. 12 (6), 5394–5407 (2018).

### Applicant Profile

Candidates must hold a Master's degree in a related discipline and should enrol in a Ph.D. program at the UAB in 2020/21. They should be highly motivated and able to work independently, with solid previous experience in protein biochemistry/protein biophysics and molecular biology.

### Applications

To apply, send your CV, a short motivation letter describing why you do want to incorporate into the group, your background, and technical skills, and a scan of the Certified Academic Record to [Salvador.Ventura@uab.es](mailto:Salvador.Ventura@uab.es), before 20 October 2020.

