

Post-doctoral position in molecular and cellular membrane biology

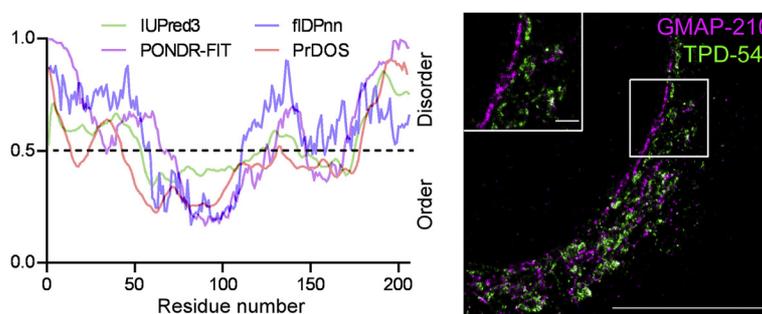
Project. We are looking for a highly motivated post-doc interested in molecular and cellular membrane biology. The research will be at the crossroads between organelle cell biology, lipid metabolism and protein biochemistry. The protein of interest is intrinsically disordered and combines different properties including membrane curvature recognition, ability to form biocondensates *in vivo* and *in vitro*, and tight control by phosphorylation. The organelles at play are intracellular nanovesicles, a new type of transport vesicles in the cell, and lipid droplets, which act as a reservoir of energy and lipids. The metabolism pathways include transport routes between organelles that can be followed by high performance thin layer chromatography coupled to lipid mass spectrometry and might allow the cell to regulate its membrane constituents.

Expertise: Organelle biology and lipid metabolism and/or protein and lipid biochemistry

Other skills: Taste for team work, for complementary experimental approaches and for reading, writing and communicating in English.

Support: The project is directly supported by a grant from the *Agence Nationale de la Recherche (ANR)* and is linked to another project supported by the *European Research Council (ERC)*

Duration: 2 years (which can be combined to other fellowships that the candidate is encouraged to apply to)



The institute and the team. The **Institut de Pharmacologie Moléculaire et Cellulaire (IPMC)** is a joint unit between the **Université Côte d'Azur** and the **CNRS**. IPMC includes various state-of-the-art facilities for cell imaging, mass spectrometry and genomics. The team of **B Antony** is interested in membrane dynamics and is best known for the following discoveries: (1) membrane curvature is cellular information with the identification of protein motifs that acutely sense membrane curvature; (2) The phosphoinositide PI(4)P provides the energy for the vectorial transport of cholesterol between cellular organelles; (3) Polyunsaturated lipids adapt their conformation to membrane deformation thereby facilitating membrane deformation. The team is equipped for protein/lipid biochemistry as well as for cell biology and computational biology. This includes, cell culture, imaging systems, protein and lipid chromatography (FPLC, HPTLC) various spectrophotometers (UV-visible, CD, fluorimeters), dynamic light scattering, and numerous computers for molecular dynamics.

Recent publications

- Reynaud A, Magdeleine M, Patel A, Gay AS, Debayle D, Abelanet S, Antony B. Tumor protein D54 binds intracellular nanovesicles via an extended amphipathic region. *J Biol Chem* (2022) 298 102136.
- Jamecna D, Polidori J, Mesmin B, Dezi M, Levy D, Bigay J, Antony B. An Intrinsically Disordered Region in OSBP Acts as an Entropic Barrier to Control Protein Dynamics and Orientation at Membrane Contact Sites. *Dev Cell.* (2019) 49:220-234.
- Manni MM, Tiberti ML, Pagnotta S, Barelli H, Gautier R, Antony B. Acyl chain asymmetry and polyunsaturation of brain phospholipids facilitate membrane vesiculation without leakage. *Elife.* (2018) 7:e34394.
- Mesmin B, Bigay J, Polidori J, Jamecna D, Lacas-Gervais S, Antony B. Sterol transfer, PI4P consumption, and control of membrane lipid order by endogenous OSBP. *EMBO J.* (2017) 36: 3156-3174.
- Magdeleine M, Gautier R, Gounon P, Barelli H, Vanni S, Antony B. A filter at the entrance of the Golgi that selects vesicles according to size and bulk lipid composition. *Elife.* (2016) 5:e16988.

Applications should include cover letter, CV, copies of certificates, and contact information of two referees.

Contact : Bruno Antony : antony@ipmc.cnrs.fr – further info: <https://www.ipmc.cnrs.fr?page=antony>

