



Post-Doctoral Fellowship: GPCR-ion channel based biosensors

Design and optimization of biosensors based on G protein-coupled receptors linked to an ion channel for integration in nanoelectronic platforms

Subject. G Protein-Coupled Receptors (GPCRs) is the largest family of mammalian membrane proteins. We have developed an original biosensor based on the attachment of GPCRs to an ion channel and referred to Ion Channel-Coupled Receptors (ICCRs) (Moreau *et al.* Nature Nanotechnology 2008). Motions of the receptor induced by its activity (ligand binding, G protein activation) are translated by the ion channel into an electrical current easily detectable by electrophysiological techniques. Several functional ICCRs were designed from non-olfactory receptors. In the frame of a project funded by the [European Research Council \(ERC\)](#), the post-doctoral fellow will develop this technology with new receptors in collaboration with partners from the Seoul National University in order to design original biosensors in interface with nanoelectronic systems.

Location. The post-doctoral position will take place in the Channels group of the Institute for Structural Biology (IBS) (<http://www.ibs.fr/groups/channels-group/>) within the European Synchrotron campus. This project will benefit from the strong expertise of the team in protein engineering and structure-function studies of membrane proteins. The routine methods used in the host laboratory are standard molecular biology techniques and electrophysiological characterization of membrane proteins heterologously expressed in *Xenopus* oocytes. The post-doctoral researcher will have specific access in the laboratory to a state-of-the-art robot for automatic recordings ([HiClamp](#)) and also to the numerous exceptional facilities shared between the members of the [Partnership for Structural Biology](#) (EMBL, ILL, IBS, UVHCI, ESRF). The candidate will develop her/his scientific skills in a stimulating and international environment in the "[capital of the French Alps](#)" at only 3hrs from Paris by fast-train and 1hr by bus from the Lyons international airport.

Profile. Holder of a PhD with excellent academic records. Experience with ion channels and/or GPCR at the molecular or cellular level. Several meetings and collaborative work will be performed in South Korea. Enthusiasm, rigor, perseverance, team spirit and high motivation for basic and applied research will be essential for her/his personal and professional fulfilment in an international environment. The working language is English.

Position. Contract with the French [CNRS](#) Institution, starting as soon as possible for 30 months (depending on previous French academic contracts). The salary is commensurated with experience (≥ 2.500 €/month, gross income).

Application. Send CV, cover letter and 2 references to [christophe.moreau\(at\)ibs.fr](mailto:christophe.moreau(at)ibs.fr) with the subject: ERC_PostDoc2017.