Postdoc position in Molecular Engineering of Piezo Channels

Laboratoire de Conception et Application de Molécules Bioactives
Illkirch, France

Start date: November 1st, 2019

We seek to hire a highly motivated postdoctoral fellow to investigate the biophysics of Piezo channels, a recently discovered family of mechanosensitive ion channels involved in various processes as diverse as perceiving touch or regulating the volume of red blood cells. Piezo channels form trimeric transmembrane pores which open in response to mechanical deformation of the cell membrane. Recent studies have shown that Piezo channels share an unexpected structural similarity with P2X receptors, which are other, genetically unrelated trimeric ion channels. In this project, we are willing to explore the relationships between Piezo and P2X channels to ask whether or not they operate with similar molecular mechanisms. we will delineate the role of each modular domain of Piezo channel by designing chimeric proteins with P2X receptors. In addition, we will investigate the gating motions of Piezo channels by using photoswitchable 'tweezers', a novel approach that reliably identified gating motions of P2X ion channels. The fellow will use different experimental approaches, such as patch-clamp electrophysiology coupled to a piezo-electrically driven device, molecular biology and cell physiology.
The University of Strasbourg offers a highly dynamic social and scientific environment in a very nice place. The host team has worldwide recognition for its work on the structure and function of ATP-gated P2X receptors, and especially, for his pioneering work of the first light-gated P2X receptors.

The successful candidate must have a PhD (or being in the process of completing) with a demonstrated track record of productive research, and must be able to work both independently and as part of collaborative team. Previous experience in electrophysiology is highly desirable. A background in ion channel and receptor biophysics as well as molecular neuroscience would be a plus.
The position has 2 years salary —around 2300 € (free of charge)/month— funded by an **USIAS grant** (University of Strasbourg Institute for Advanced Study).

Candidates should send a CV (including at least two references) and a brief statement of research experience to Thomas Grutter (grutter@unistra.fr).

Selection of publications from the host team:

- Harkart et al. (2017) ***PNAS (USA)*** 114, E3786-E3795.
- Habermacher et al. (2016) ***eLife*** 5, e11050.
- Lemoine et al. (2013) ***PNAS (USA)*** 110, 20813-20818.
- Jiang et al. (2012) ***EMBO J.*** 31, 2134-2143.
- Jiang et al. (2011) ***PNAS (USA)*** 108, 9066-9071.