



Fundación Biofísica Bizkaia  
Biofisika Bizkaia Fundazioa



## FUNDACIÓN BIOFÍSICA BIZKAIA / BIOFISIKA BIZKAIA FUNDAZIOA

OFFER – TRAINING CONTRACT (Two months)

Publication date: October 29, 2018

Fundación Biofísica Bizkaia (FBB), center of excellence on an international level with the main aim of promoting a multidisciplinary program in the field of Biophysics and its application in the areas of biotechnology and Health, is seeking a graduate in **Biotechnology, Master on Biomedicine and Molecular Biology**.

We offer a training period of two months in one of the research groups of Biofisika. If the training period is successful, the candidate could have the opportunity to develop the PhD Thesis with the same research group.

### Description of the project

Ion channels are protein molecules that span across the cell membrane allowing the passage of ions from one side of the membrane to the other. The availability of structural information at atomic resolution of the Kv7 family has improved significantly in recent years. In combination with the current state-of-the-art computational algorithms and high-performance computing facilities, molecular dynamics simulations have become a prominent tool to investigate membrane protein organisation and dynamics. We have discovered the critical requirement of the interaction with the Ca<sup>2+</sup> sensor calmodulin (CaM) for the functioning of a class of voltage-dependent potassium channel, named Kv7.2, essential for the control of neuronal excitability. Recently, we have generated by NMR an atomic model of the complex, one of the largest solved using this technique [Bernardo-Seisdedos G, et al. 2018 PNAS 115, 2395-2400], which provides a remarkable substrate for molecular dynamic studies.

### Education and Experience Required

The candidates should have a Degree of Biotechnology, Master on Biomedicine and Molecular Biology, English FIRST certificate, 3 months of experience in computational biology and 5 years of experience in molecular biology laboratories. Techniques and skills: Unix Terminal usage, using AutoDock and AutoDock Vina, using DINC software for docking peptides, using VMD and scripting in TCL, generating and optimizing molecules with GaussView, building systems for running molecular dynamic simulations, equilibrating systems before running molecular dynamic simulations, running molecular dynamic simulations in NAMD, using CHARMM-GUI for generating systems, doing computational benchmarks, using PackMol software for generating large systems, using different HPC (High Performance Computing) machines, FRET technique, cloning, transfection of cell lines, western-blot technique, co-immunoprecipitation technique, fluorometry, fluorescence microscopy.

**Contact:** Applicants are encouraged to send their CV through the Biofisika website contact page (<http://biofisika.org/contact/>), adding the following subject: [Job Application: 36 AV]

**Deadline: November 6, 2018**

Please note that due to the large number of applicants expected, it will not be possible to communicate the evaluation results to all the candidates.