Research Training Contract

6 months, extendible to a PhD position

Light operated drugs for precise protein control in vivo

MCS/Laboratory of Medicinal Chemistry, IQAC-CSIC, Barcelona

A 6-month internship contract is available for students in the group of Dr Amadeu Llebaria starting in September 2016 to early 2017. After the 6-month training period it may be extended to a full PhD position. The laboratory is part of a CSIC Research Institute located in the Pedralbes University area in Barcelona, Spain.

Our research is focused in the drug discovery and chemical biology. The main goals are the preparation and optimization of compounds that are active against a pharmaceutical target and the development of novel therapeutics. The student will have the opportunity of joining the research team in a subject with excellent recent results and to collaborate in the optimization of the molecules for light control of synaptic activity via GPCR photoactive molecules. This project has strong potential for neurodegeneration, neuropathic pain and other brain diseases using radically new concepts in drug therapy.

CANDIDATES:

- The required candidates are graduated chemists, pharmacists or biochemists with knowledge of organic chemistry, synthesis, drug design, modelling and/or biochemistry.
- Academic marks over 2,0 (system 1-4), or over 8 (in qualifications 0-10) are recommended
- Master or DEA finished or expected to be finished during 2016
- Experience in computational chemistry, chemical laboratory and organic synthesis is valuable.

The project is oriented to find molecules therapeutically useful for the precise control of protein activity in vivo using photoactive molecules that bind to drug receptors. The student will work in the design, synthesis and characterization of new molecules and will be trained in compound testing to measure compound activity in biological and cell assays and the photophysical characterization in the IQAC group or by research periods in external laboratories of collaborators. This program will cover most of the aspects of the preclinical drug discovery development of a candidate molecule and light biophysical control of proteins providing a valuable formation to the doctoral candidate.

The student will gain invaluable experience in PHOTOPHARMACOLOGY an exciting, rapidly-developing area of medicinal and biological chemistry, receiving extensive training in the synthesis and characterisation of organic molecules and in the use of key characterization and purification techniques (including NMR spectroscopy, HPLC, HPLC-MS, chromatography, etc.) and in pharmacology. Patent filling is normally performed in the group to protect the results and the student will participate also in this task. Transferable skills will also be developed by presenting results at group meetings and at national/international research conferences.

Recent publications of the group in the project:

Izquierdo-Serra et al Nature Communications in press
Rovira et al Cell Chem Biol in press.

Send CV before August 31, 2016:
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