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## -Marie Sklodowska-Curie Individual Fellowships 2016

- **Contact Person/Scientist in charge**

Prof. Antonio Ferrer-Montiel (Chair: Sensory Neurobiology Group): [aferrer@umh.es](mailto:aferrer@umh.es)

- **Institute**

Institute of Molecular and Cellular Biology (IBMC; <http://ibmc.umh.es>); Universitas Miguel Hernández. Av de la Universidad s/n; 03202. Elche (Alicante). Spain. The IBMC is a multidisciplinary Research Institute actively involved in translational science in the fields of biotechnology and health. The research groups have a commitment to focus their research to address societal problems and to provide science-based solutions. As major achievements of the IBMC are the large number of patent applications and the creation of spin-off companies that exploit the discoveries.

- **Brief description of the Centre/Research Group (<http://ibmc.umh.es>)**

The sensory neurobiology group is a research team focused on understanding the mechanisms of pain transduction with the aim of developing novel therapeutic interventions. We focus on the role of TRP channels' signalplexes that are central players in the transduction of environmental physical and chemical stimuli to neuronal signaling. These channels are generators of action potentials in sensory neurons, thus determining neuronal excitability. Noteworthy, the activity of these channels is notably influenced by pro-algesic/inflammatory agents that are released upon injury and is highly context-dependent. Our group has discovered and reported that pro-algesic agents potentiate TRP channel activity by augmenting the recruitment of new channels to the plasma membrane and/or by modifying channel gating, i.e. reducing threshold of activation. These findings have opened new avenues for the discovery of new analgesic molecules for pain intervention. One of such products is currently in Phase II clinical trials.

- **Project description**

A motivated candidate is sought to join the group and lead a project aimed at the therapeutic validation of a novel molecular target that we have identified in the pain transduction pathway involved in modulating TRP channel activity. This is an exciting research program that will combine molecular biology and molecular pharmacology, along with the use of animal models to investigate the role of this target in inflammatory and neuropathic pain. A central milestone will be the design of pharmacological tools that functionally regulate this thus far undruggable target. Designed pharmacological tools will be used to interrogate the role of this target in TRP and nociceptor algesic sensitization and

to evaluate their therapeutic potential. In addition, the project will involve the use of human nociceptors differentiated from iPS to test the efficacy of potential therapeutic candidates modulating algesic potentiation of human sensory neurons.

- **Research área**

The Research area is centered in **Life Sciences**

- **Applications** (documents to be submitted and deadlines)

Interested candidates should submit to Prof. Antonio Ferrer ([aferrer@umh.es](mailto:aferrer@umh.es)), before June 30<sup>th</sup>, 2016, the following documentation: i) Curriculum vitae; ii) 300 word letter of interest, and iii) the name and contact of three researchers that can give references.