

PhD student position- Universitat de Barcelona

Causes of Vestibular Sensory Loss

Our laboratory is looking for a PhD student candidate interested in a Thesis project on the pathogenesis of vestibular sensory loss in vestibular schwannoma patients. The 3-year position is fully funded by a grant from La Marató de TV3 (<https://www.ccma.cat/tv3/marato/projectes-financats/2019/1930/>)

To be a candidate you:

- Hold a degree in biomedical-related sciences (Biomedical Sciences, Biology, Pharmacy, others).
- Will hold (by October 2021) a Master in Neuroscience, Biomedicine or other biomedical research areas.
- Have good academic records.
- Will hold (by October 2021) a certification for animal experimentation.
- Have good English

Project:

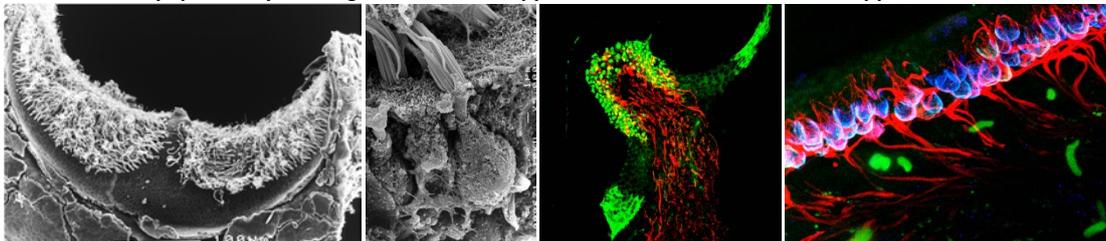
Neurofibromatosis type 2 (NF2) is a genetic rare disease with a prevalence of 1:60.000. NF2 patients develop vestibular schwannomas, a kind of tumors that develop in the vestibular nerve. Vestibular schwannomas can be also sporadic, not due to NF2. In any case, these tumors cause loss of inner ear function, that is, loss of hearing and equilibrium. It has been observed that the functional loss correlate poorly with tumor size or growth. The project will evaluate the hypothesis that the functional loss is mainly due to damage of the vestibular sensory epithelium caused by factors secreted by the tumor. If the hypothesis proves true, the functional decline suffered by the patients could be useful in predicting tumor properties and therefore contribute to improve prognosis and select treatments. The project will include 1) the study of vestibular epithelia from patients (obtained when surgical removal of the tumor is required because of its growth), 2) the study of the effect of tumor secretions (provided by our associated team collecting the tumors in the same surgeries) on explant cultures of rat vestibular sensory epithelia.

The host laboratory is located at the Departament de Ciències Fisiològiques, Universitat de Barcelona (Campus Bellvitge) and offers a good work ambience and a dynamic scientific environment. It belongs to the Institute of Neuroscience of the UB (<http://www.neurociencies.ub.edu/>) and the neuroscience program of the IDIBELL institute (<https://idibell.cat/recerca/area-de-neurociencies/programa-de-neurociencies/>). The laboratory has access to all the equipment and facilities necessary to develop the project. The Ph.D. project will receive close supervision by a dedicated supervisor who has a successful record of direction of completed Thesis.

Contact:

Send a C.V., including full academic record and short letter of interest to Dr. Jordi Llorens, Departament de Ciències Fisiològiques, Campus de Bellvitge, Universitat de Barcelona, e-mail: jllorens@ub.edu

Vestibular sensory epithelia by scanning electron microscopy and confocal fluorescence microscopy.



Representative recent publications of the laboratory:

- Greguske EA, Carreres-Pons M, Cutillas B, Boadas-Vaello P, Llorens J. Calyx junction dismantlement and synaptic uncoupling precede hair cell extrusion in the vestibular sensory epithelium during sub-chronic 3,3'-iminodipropionitrile ototoxicity in the mouse. *Archives of Toxicology* 93: 417-434 (2019)
- Martins-Lopes V, Bellmunt A, Greguske EA, Maroto AF, Boadas-Vaello P, Llorens J. Quantitative assessment of anti-gravity reflexes to evaluate vestibular dysfunction in rats. *Journal of the Association for Research in Otolaryngology* 20: 553-563 (2019)
- Sedó-Cabezón L., Jedynek P., Boadas-Vaello P., Llorens J. Transient alteration of the vestibular calyceal junction and synapse in response to chronic ototoxic insult in rats. *Disease Models and Mechanisms* 8: 1323-1337 (2015).