

Joint PhD fellowship in Exosomes Engineering - start September 2016

A joint PhD fellowship is offered as a collaborative project between the groups of **Niels Reichardt**, Head of the Glycotechnology laboratory, CIC biomaGUNE, San Sebastian and **Juan-Manuel Falcon**, Head of Exosomes Laboratory, CIC bioGUNE, Bilbao. This project will combine the expertise of both groups in molecular biology and biomaterials research to design, develop and test ***Glycoengineered Exosomes as Vehicles for Gene and Drug Delivery***. Exosomes are 40-150 nm sized vesicles secreted by wide range of mammalian cells as vehicles for intercellular trafficking of cellular components including miRNA, mRNA, proteins, metabolites etc. The ability to connect distant tissues and pass biological barriers including the blood brain barrier has spurred a broad interest in exosomes as natural drug and gene delivery vehicles. Exosomes consist of a lipid bilayer membrane that is functionalized with glycoproteins, tetraspanins and other types of receptors and which surrounds a cytosolic mixture of miRNA, mRNA, proteins, metabolites, etc. which are introduced into the recipient cell by different mechanisms. Importantly, their cargo can be modified to carry desired molecules. Exosomes surface glycans play an important role in vesicle stability, solubility and trafficking and certain carbohydrate structures could be exploited to code a vesicle for targeting tissue specific receptors. **The PhD project will use** exosomes as tunable scaffolds to build biomaterials with therapeutic properties by modifying their cargo and surface glycosylation pattern.

Training: The PhD student will acquire training in chemical synthesis, glycan analysis, cellular and molecular biology.

Joint supervision: The PhD student will officially belong to the Glycotechnology laboratory, CIC biomaGUNE, San Sebastian but will spend around 50% of his time at the Exosomes lab, CIC bioGUNE, Bilbao. Help in finding accommodation in both cities will be given.

Duration: The fellowship is limited to 36 months. Start date is beginning of September 2016. The student will be enrolled in a PhD program at the University of the Basque Country as the degree awarding institution.

Requirements: The applicant should have an excellent master degree in chemistry or biochemistry, be fluent in English and is expected to rapidly take up and develop techniques and concepts from synthetic and analytical chemistry as well as molecular biology. Special attention during the execution of the thesis will be given to the translation of research results towards industrial commercialization, where both partners have extensive previous experience.

Application: Please send you CV together with a letter of motivation and a minimum of 2 references to rrhh@cicbiomagune.es specifying **Ref. 302** in the subject line until 31.07.2016.

Further information:

<http://www.ikerbasque.net/juan.falcon>

www.glycotechnology.net

www.cicbiomagune.es

www.cicbiogune.es