

@ 3-year PhD position in bioproduction of EV for therapy at Oniris, Nantes, **starting 01/12/2021**.

Type 1 diabetes is a chronic disease resulting from the autoimmune destruction of the insulin-secreting pancreatic beta cells. Extracellular vesicles endowed with immune-regulatory properties have gained attention for immune therapy of autoimmune conditions. More complex than recombinant proteins, this new class of nanobiomedicine requires the development of standardized bioprocesses for large scale production of safe EV with controlled biological properties. To address this problem, the PhD candidate will optimize a bioprocess for EV produced by a human beta cell line and transfer/adapt the process from the laboratory to the commercial scale. Techniques to be employed include culture in bioreactors, scalable EV isolation (TFF, SEC), characterization (NTA, FC and multi-omic) and mode of action assays in vitro and in vivo in humanized mouse models.

The PhD work will be performed at the IECM (Immunologie-Endocrinologie Cellulaire et Moléculaire) laboratory at Oniris in collaboration with the LRGP (Réaction et Génie des Procédés, team BioProMo) UMR 7274 CNRS/Université de Lorraine/ENSAIA (Nancy). The IECM lab has a 10 year-expertise in the production and characterisation of beta EV . The team BioProMo is in charge of a platform for the large-scale production of human cell for the industrial hub "le grand défi biomédicaments".

We are seeking for a highly motivated person with a strong interest in experimental cell culture and biomedical innovation. The applicant should have a background in biotechnology-bioengineering. Ability to work independently, rigor, curiosity as well as good written and oral communication skills are required to realize this research successfully. For application details please contact: mathilde.mosser@oniris-nantes.fr.