GIGA Research Centre
University of Liège
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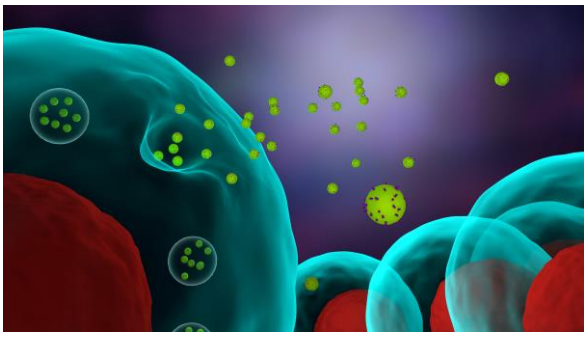
http://www.giga.uliege.be/lam

The Laboratory of Molecular Angiogenesis offers

PhD student position
on exosome/ extracellular vesicles research in tumoral environment

4 years grant (2 years renewable), starting October 2022

Our centre, the GIGA research center is located at the University of Liege in Belgium and offers a stimulatory intellectual and collaborative environment and state-of the art facilities.



PROJECT DESCRIPTION

Extracellular vesicles (EV) are small vesicles released by cells in the extracellular milieu that mediate cell-cell communication. EVs have been shown to contain RNA, DNA, lipid and proteins that define a specific repertoire of molecular cargo that are representative of their originating cells. In the context of cancer, EVs are potentially secreted by all cell types that compose in **tumor microenvironment** (TME)**.** Those vesicles thus represent a new source of regulators of tumor progression.

Our lab has a 10 year-expertise in EV research in angiogenesis related diseases such as cancer. We recently found that EVs released by endothelial cells in a mammary tumor environment participate in the recruitment of macrophages within the tumor, leading to an immunomodulatory phenotype permissive for tumor growth. Those researches have been recently published in JEV (Njock* et al., 2022)

Using RNA-Seq approaches, we identified several microRNAs (miRs) found in endothelial EVs sharing common targets involved in the regulation of the immune system. To further study the impact of these miRs in a mouse tumor model, we focused on 3 miRs that are conserved between human and mouse, i.e. miR-142-5p, miR-183-5p and miR-222-3p. These miRs are released from endothelial cells in a tumor microenvironment and are transferred via EVs to macrophages. In mouse mammary tumor models, treatment with EVs enriched in these miRs leads to a polarization of macrophages towards an M2-like phenotype, which in turn promotes tumor growth.

Understanding how miRs are exported in vesicles is currently an important question that we would like to tackle in the new projet.

With this project we want to unravel how these miRs are specifically exported in EVs and determine of those miRs impact on metastasis.

SKILLS/ QUALIFICATIONS

We are seeking a highly motivated person with a strong interest in molecular biology. Master degree in molecular biology, biochemistry or biomedical sciences is required. Previous experience in classical molecular biology techniques would be an advantage (qRT-PCR, cell culture assays…) but is not required. Ability to work independently, good communication and enthusiastic personality are skills required to perform this research successfully.

For application, send C.V., contact information for two references, and a brief motivation letter including a summary of research experience to:Ingrid Struman i.struman@uliege.be

Please visit our website www.gigalam.uliege.be

Njock*, M., O'Grady*, T., Nivelles, O., Lion, M., Jacques, S., Cambier, M., Herkenne, S., Muller, F., Christian, A., Remacle, C., Guiot, J., Rahmouni, S., Dequiedt*, F., and Struman*, I. (2022). *Endothelial extracellular vesicles promote tumour growth by tumour-associated macrophage reprogramming*. **J. Extracell. Vesicles** *11*.