LECTURE SERIES 2025
CANCER RESEARCH

LUXEMBOURG INSTITUTE OF HEALTH | UNIVERSITÉ DU LUXEMBOURG

04 SEPT 2025
Thursday

LECTURE
11.00am - 12.00pm

MEET & EAT *
Light lunch provided
Salle Barbara Mc CLINTOCK
12.00pm - 1.00pm

6 7 8 9 10 11 12 1 2 3

miR-146a-5p increases melanoma brain metastasis development by elevating Notch signaling

ABSTRACT

Melanoma brain metastases (MBM) are a major clinical challenge due to the protective blood-brain barrier (BBB) and the brain's unique microenvironment. We demonstrate that extracellular vesicle (EV)-associated miR-146a promotes MBM by activating astrocytes and enhancing Notch signaling through downregulation of NUMB. This creates a tumor-supportive inflammatory niche that facilitates metastatic growth.

Knockdown of miR-146a or treatment with deserpidine significantly reduces tumor burden and improves survival in mouse models. In parallel, miR-138, also enriched in tumor EVs, increases BBB permeability, potentially supporting metastatic seeding. Multimodal imaging and spatial transcriptomics reveal tumor-induced vascular changes, hypoxia, and altered neuronal signaling in EV-exposed normal brain tissue.

Key transcriptomic responses involve VEGFB and hypoxic markers, suggesting exosome-driven reprogramming of the brain niche. These findings support a model where EV-delivered miRNAs establish a permissive environment for brain metastasis and highlight miR-146a as a promising therapeutic target.

SPEAKER

Prof Frits Thorsen
Professor, Department of Biomedicine, University of Bergen, Norway

HOST:
Luxembourg Institute of Health

RESPONSIBLE SCIENTIST:
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***Please note that registration for Meet and Eat is mandatory via the following link:**
https://lh1v-limsrvey01.lih.lu/index.php/191953?lang=en

Location:

Lecture:
CHL - Centre
Room: ***Amphitheatre***

4, rue Ernest Barblé
L-1210 Luxembourg

JOIN

Event number: 2794 070 6947
Event password: w3jTMf2Zz6w

Supported by the Luxembourg National Research Fund

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