

22 OCT
2026
Thursday

LECTURE

11.00am - 12.00pm

MEET & EAT *

Light lunch provided
James Allison (BAM3)

12.30pm - 1.30pm



How the tumor microenvironment controls T-cell infiltration and CAR-T cell efficacy in solid tumors

ABSTRACT

T-cell-based immunotherapies have transformed the treatment of several hematological malignancies, but their efficacy in solid tumors remains limited. A major obstacle is the tumor microenvironment, which restricts immune-cell trafficking, activation and persistence. Our work combines dynamic imaging of living human tumor slices with multiparametric cytometry, single-cell and spatial transcriptomics, and functional perturbations to understand these barriers directly in patient tissues. We have shown that extracellular-matrix architecture can physically constrain T-cell migration, that tumor-associated macrophages can form an additional cellular barrier to T-cell entry, and that mitochondrial metabolism is essential to sustain efficient CD8 T-cell motility and infiltration. We now apply these concepts to CAR-T cells in adult and pediatric solid tumors, including within the Cancer Grand Challenges NextGen program. By linking CAR-T-cell behavior and activation to the cellular and structural composition of the tumor microenvironment, we aim to identify predictive biomarkers of response and rational combination strategies that improve infiltration and antitumor activity. These human ex vivo models provide a bridge between mechanistic immunology and clinical translation and may help guide the development of next-generation cellular therapies for solid cancers.

SPEAKER

Dr Emmanuel Donnadieu

Director, Inserm Unit U1356 "Next-Generation Immuno-Oncology Research and Therapy in Pediatric and Adult Cancer", Gustave Roussy / Université Paris-Saclay
Research Director (DR1), CNRS; Head of Team 1 "Antitumor T-cell immunity and cancer immunotherapy"; leader of the group "Improving CAR T-cell efficacy in cancer"

HOST:

Luxembourg Institute of Health

RESPONSIBLE SCIENTIST:

Dr Clément Thomas (clément.thomas@lih.lu)

*Registration for the Meet & Eat is mandatory. Please email Siu-Thinh Ho to confirm your attendance: Siu-Thinh.Ho@lih.lu

Location:

Lecture:

CHL - Centre
Room: Amphitheatre

4, rue Ernest Barblé
L-1210 Luxembourg

In-person attendance is strongly encouraged. If you are unable to attend on site due to operational constraints, please contact Siu-Thinh Ho for the Webex link Siu-Thinh.Ho@lih.lu