Les mardis de L'IAB

IAB
EPIGENETICS • ENVIRONMENT
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MANS BROEKGAARDEN

IAB, Grenoble, France

LIPID NANOTECHNOLOGY IN THE FIGHT AGAINST CANCER: TOWARDS RADIOCONTROLLED DRUG DELIVERY SYSTEMS

5.MARCH 2024 – 11 AM – LECTURE HALL

Liposomes have been the most successful type of nanomedicine for cancer patients, playing a leading role in improving the tolerability of chemotherapeutics. However, to advance the success of liposomal drug delivery and the efficacy of cancer treatments, new approaches to physically trigger drug release in cancer tissues and increase the permeability of the protective cancer stroma are needed. Therefore, we engineer innovative liposomes that incorporate radiocatalytic nanomaterials for remote-controlled drug release that are capable of increasing tumor permeability by excessive oxidative damage to the cancer microenvironment.

This project develops a multidisciplinary approach to uncover the physicochemical mechanisms of radiation-induced drug release. We use high-content microscopy assays to study therapy efficacies and tissue permeability in 3D cultures of desmoplastic pancreatic cancer. Lastly, multimodal in vivo imaging is used to investigate the pharmacological aspects of our drug delivery systems, which we integrate with our state-of-the-art stereotactic radiosurgery platform.

Radiotherapy-controlled drug release from liposomes is a ground-breaking novel concept, and it can easily be adapted to accommodate existing and novel cancer therapeutics for a wide range of cancer types. When successful, these will inspire new therapeutic approaches that can significantly advance the standard-of-care for cancer patients.

Invited by : Jean-Luc Coll

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Allée des Alpes, 38700 La Tronche (tram line B, stop : Grand Sablon)
The seminar is followed by discussions and exchanges with the speaker and a sandwich buffet is offered

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