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ERIC ALLEMANN

University of Geneva, Switzerland

NOVEL BIOPOLYMERS, NANOCRYSTALS, AND STEM CELLS. IS SUCH A COCKTAIL NEEDED TO TACKLE OSTEOARTHRITIS ?

20.MAY 2025 – 11 AM – LECTURE HALL

Osteoarthritis (OA) is a prevalent and debilitating joint disease worldwide, with current therapies offering only symptomatic relief rather than true regeneration. Emerging research suggests that an integrated strategy involving novel biopolymers, extended-release delivery systems, and stem cells may offer a transformative approach to OA treatment. Biopolymers, such as hyaluronic acid derivatives, provide biocompatible scaffolds that mimic the extracellular matrix and support tissue regeneration. Drug nanocrystals, entrapped in biodegradable microparticles, enhance the bioactivity and sustained delivery of disease-modifying osteoarthritis drugs (DMOADs) through their tunable physicochemical properties. Stem cells, particularly mesenchymal stem cells (MSCs), offer the potential to modulate the inflammatory microenvironment of the osteoarthritic joint and promote tissue repair.
Combining these components into a "therapeutic cocktail" could enable a multifaceted approach to OA, addressing both structural and biological aspects of the disease. In this presentation, I will summarize 15 years of collaborative research in this field conducted with my colleague Dr. Olivier Jordan, alongside numerous PhD students and postdoctoral fellows. Our work has evolved from the development of simple biodegradable microparticles to advanced biopolymer systems capable of releasing glucose to support stem cell metabolism and viability.

Invited by : Jean-Luc Coll

Twitter : IAB_Officiel
Website : https://iab-grenoble.fr/

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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