

Lithuanian-French scientific cooperation in Horizon Europe: IMC experience

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**State Research Institute
Center of Innovative Medicine**





Development of Adipose Tissue Derived Stem Cell (ADSC) Therapy for Osteoarthritis *ADIPOA*

EC FP7 large scale international collaborative project (Grant No. 241719) 2010-2014

COORDINATOR Prof. Christian Jorgensen, Centre Hospilaire Universitaire de Montpellier, INSERM, France

Daniele Noel, INSERM, France

PARTNERS:

Philippe Bourin, Etablissement Français du Sang, Toulouse, France

Louis Casteilla, INSERM, CNRS, Université Toulouse III, France

Other PARTNERS: universities and research centers from Ireland, Italy, Germany, Netherlands, Israel and Lithuania (IMC; leader dr. Eiva Bernotienė)

Project budget:

12 124 769 €

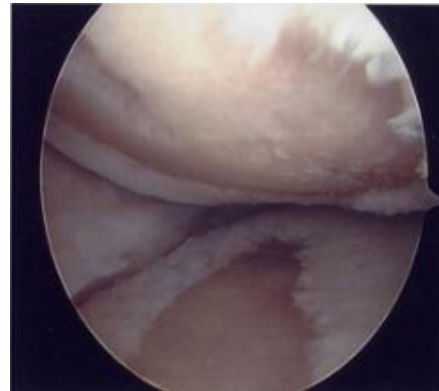
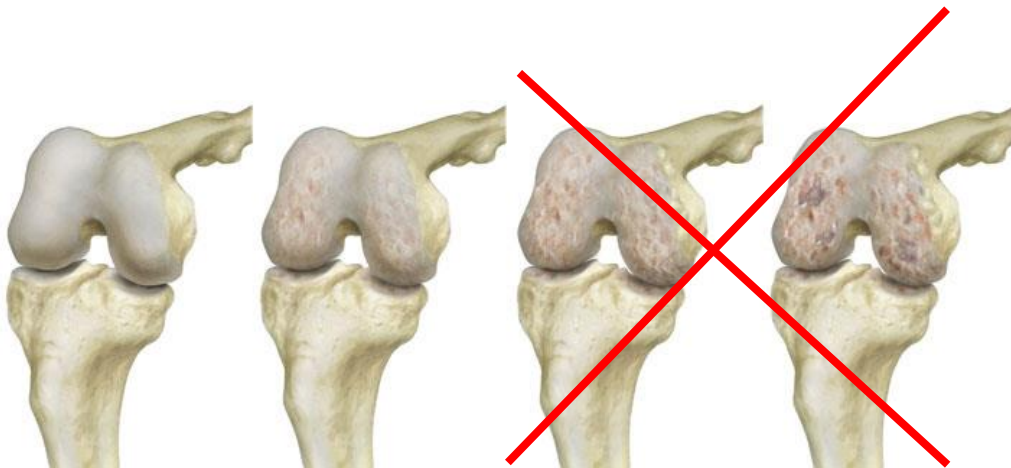
Centre of Innovative

Medicine budget:

944 368 €

Osteoarthritis – articular disease associated with cartilage degeneration and leading to disability.

Aim of the study – to implement ADSC based cellular therapy.



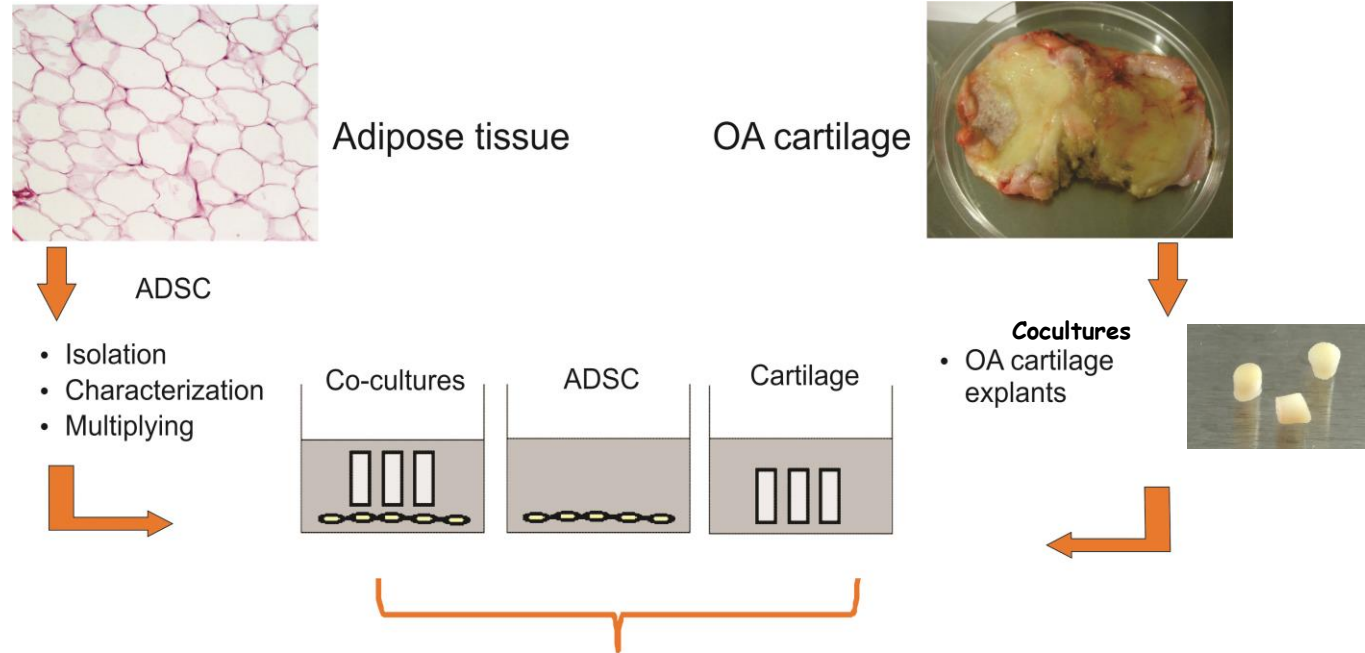


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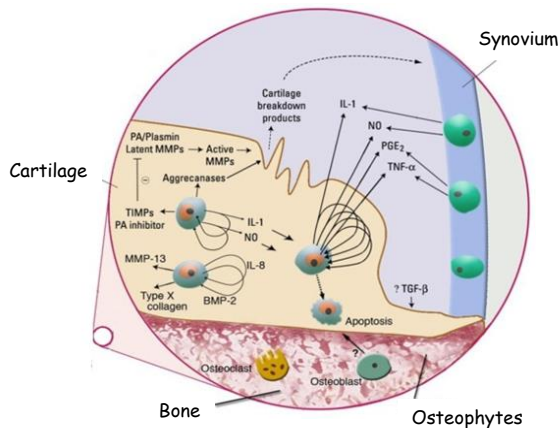
Investigation scheme IMC
Department of Regenerative Medicine:
 Cocultures of human patient joint tissues with ADSC – **crosstalk?**



Conclusions – ADSC:

- Safe for therapeutic application;
- Chondroprotective effects
- ✓ also under inflammation;
- Stimulate cartilage repairment.

Clinical trial phase I:
 ✓ EMA permission





Autologous adipose derived stem cell therapy: ADIPOA2 phase 2 trial



H2020-SC1-2017
Grant Agreement
number: 732163
Coordination CHU
Montpellier

- A phase IIb, multi-centre, prospective, randomized, **double-blind study**, comparing culture-expanded autologous ADSC with placebo
- **3 arms to a total of 153 patients** and followed up for 25 months (1 month before and 24 months after knee injection)
- Duration of recruitment for each centre: 12 months

Treatment group	Dose	Frequency	Number of patients
Group 1	$2 \cdot 10^6$ ADSC	Single injection	51
Group 2	$10 \cdot 10^6$ ADSC	Single injection	51
Group 3	Vehicle	Single injection	51

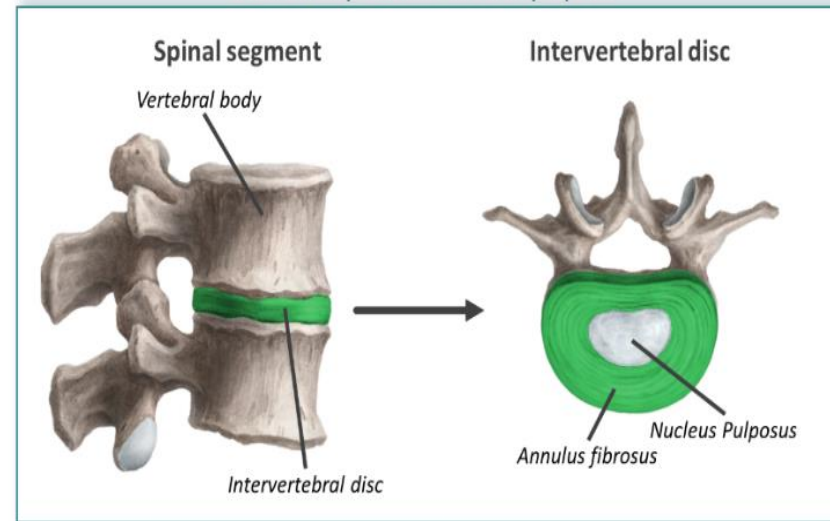


Euronanomed 3: Proposal Evospine II stage of evaluation

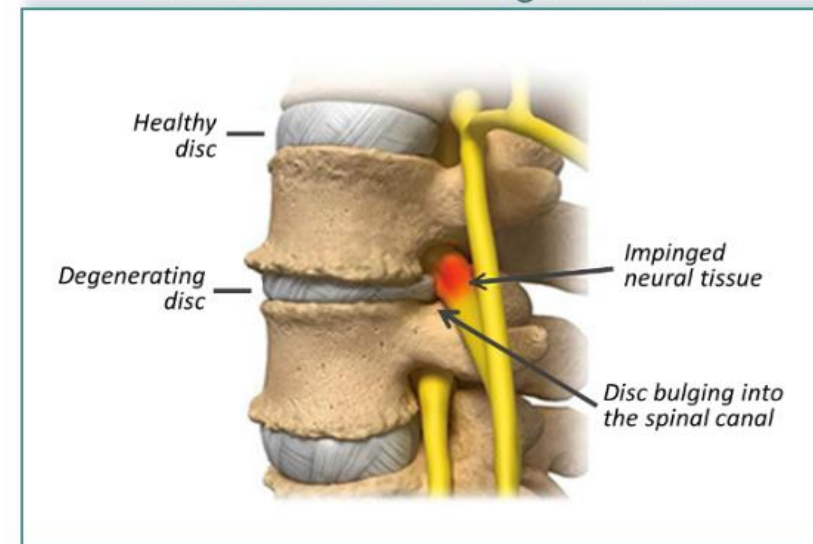
Stem cell-based technologies for
intervertebral disc degeneration

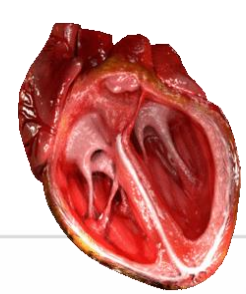
COORDINATOR Prof. Christian
Jorgensen, CHU de Montpellier,
Danièle Noël; INSERM, France
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Anatomy of the healthy spine



Intervertebral Disc Degeneration





ElectroMechanoActive Polymer-based Scaffolds for Heart-on-Chip, 2021-2025



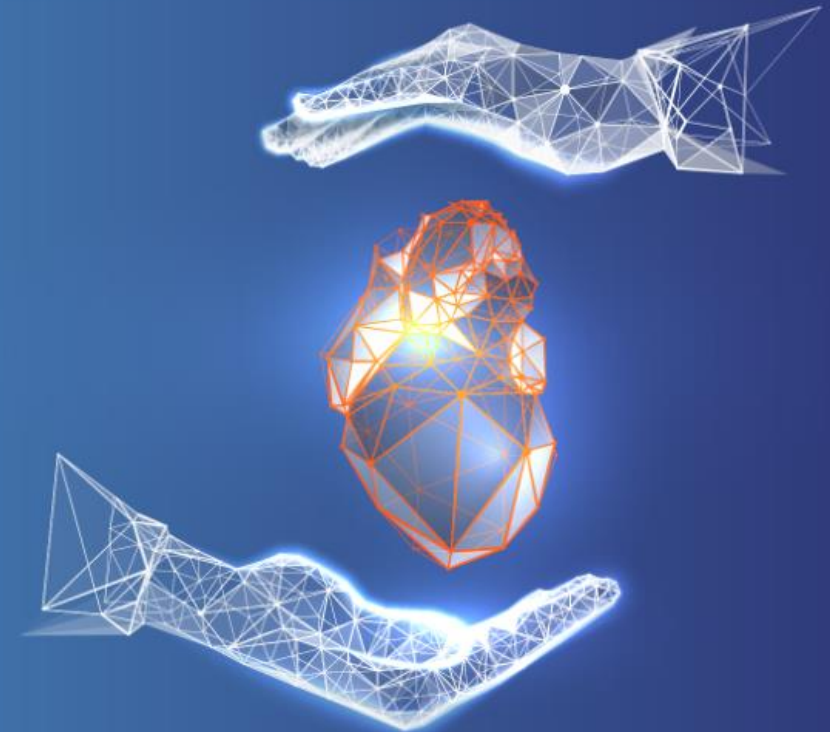
Coordinator: Dr. Christian Bergaud; Centre National de la Recherche Scientifique CNRS (CNRS) France; other partners from Hungary Germany Switzerland Portugal Germany Spain Czeck and Lithuania Leader of IMC partner Dr. E.Bernotienė

Total budget 5.356.096 €; IMC Partner 748.753 €

Advancing the Understanding and Treatment of Heart Diseases

Horizon 2020 Call: H2020-NMBP-TR-IND-2018-2020 (TRANSFORMING EUROPEAN INDUSTRY)

The primary goal of the project is to achieve clinically relevant cardiac models for early-stage cardiovascular drug screening.





ElectroMechanoActive Polymer-based Scaffolds for Heart-on-Chip, 2021-2025

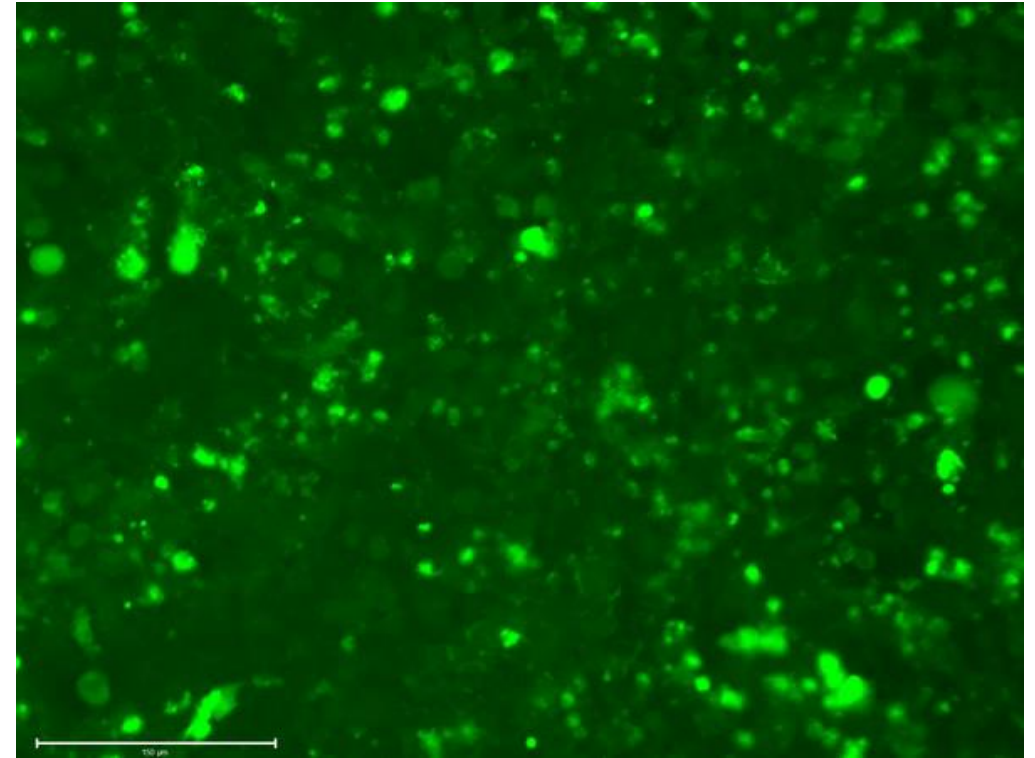
Development of platform for growth and maturation of cardiac microtissues

biomimetic 3D microenvironment that provides all the needed stimuli will be developed:

- electrical,
- mechanical,
- biochemical (release of active molecules)

Role of IMC:

- ✓ evaluation of human iPSC-derived cardiomyocyte maturation on the scaffolds
- ✓ healthy and diseased states
- ✓ responses to drugs



EMAPS

Advancing the Understanding and Treatment of Heart Diseases





ADIPOA

Acknowledgements

Inserm

Institut national de la santé et de la recherche médicale



Department of Regenerative Medicine



Thank you



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