



SC3M - ELECTRON MICROSCOPY, MICROCHARACTERIZATION AND FUNCTIONAL MORPHOLOGY AND IMAGING

Histology department: Mineralized tissue and biomaterials processing and preparation for SEM, histological staining, ISH, IHC

Electron microscopy and microtomodensitometry department: cryo scanning; μ CT for non-destructive analysis of tissues in 3D.

Custom image analysis service

BIO³ - BIOMATERIALS, BIOFABRICATION, BIOMECHANICS

Biomaterial synthesis: CaP ceramics, (in)organic biomaterials as bio Ink for biofabrication.

Biofabrication by additive manufacturing: from CAD to printing on (bio)printers (Ulti-maker, Cellink and RegenHU).

Mechanical tests and physical chemistry characterisation: by XRD, FTIR spectro/microscopy, UV/Visible spectroscopy, 3D-digital microscopy, diffusion, mechanical tests and rheology (shear rate, stress sweep, frequency sweep, ...).

HiMoIA - MOLECULAR HISTOLOGY

Bone microarchitecture and histomorphometry: static/dynamic histomorphometry measurements, in-vivo investigation of bone microarchitecture and ex-vivo analysis in 3D.

Extracellular matrix material properties: quantitative backscattered electron imaging (qBEI), vibrational microscopies for the study of organic and mineral components.

Biomechanical response: three-point bending, compression test, elongation test, nanoindentation.

130 people
15 senior scientists, 9 postdocs, 49 clinicians, 24 tech. staff, 16 PhD & 17 grad. students

A multidisciplinary research center for skeleton physiopathology and disorders: two teams side by side

REJOINT : Regeneration and pathophysiology of joints
REGOS : Regenerative medicine of bone tissues

Three locations +2200 m²
University of Angers
ONIRIS Vet school
Nantes University

> 60 publications per year; 20 patents

CONTACT



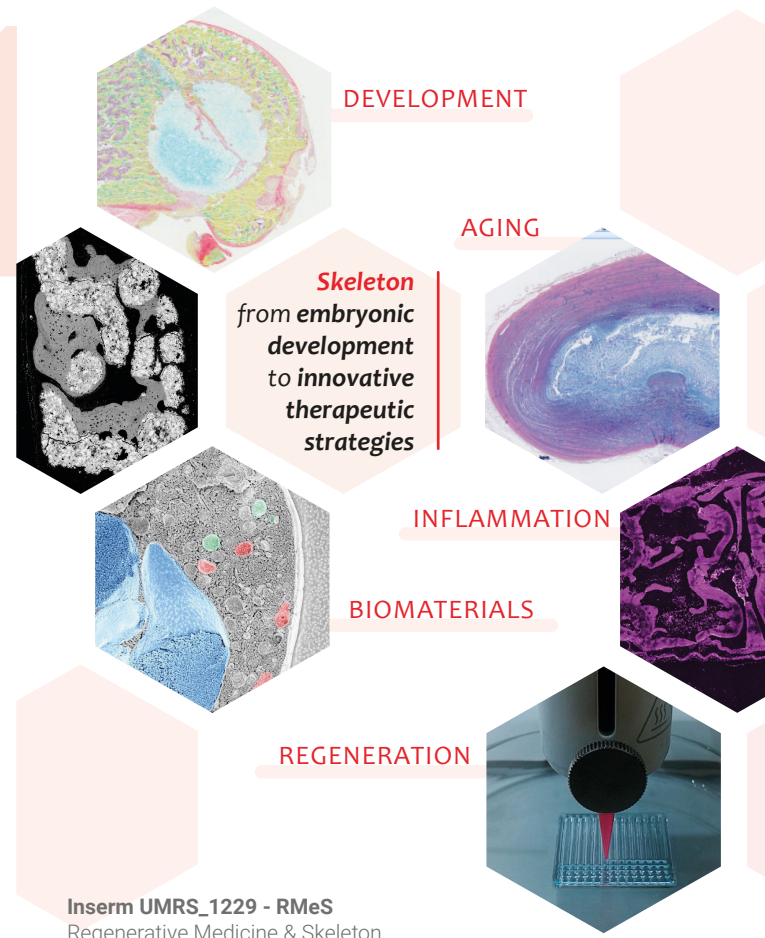
**INSERM UMRS 1229
Regenerative Medicine and Skeleton**

www.rmes.univ-nantes.fr

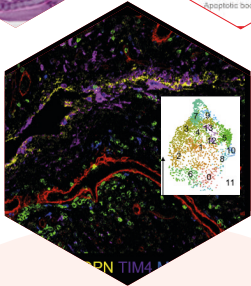
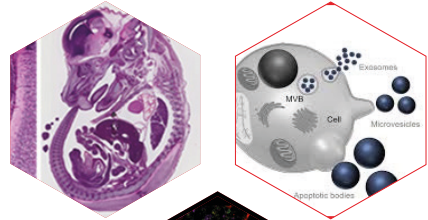
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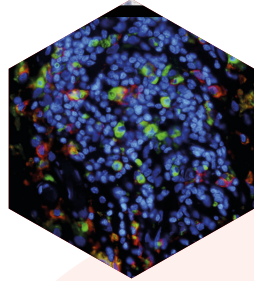
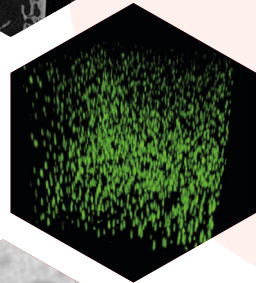
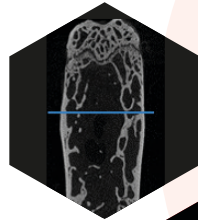
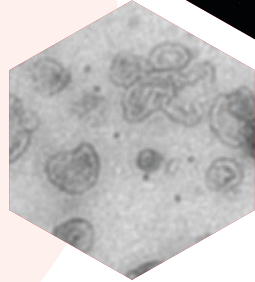
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Regenerative Medicine & Skeleton



Basic

Development, inflammation & aging of skeletal tissues

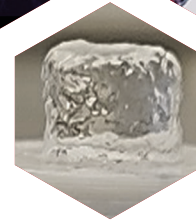
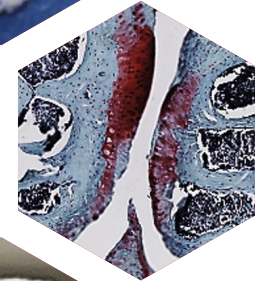
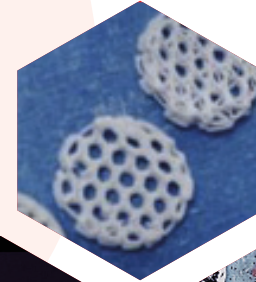
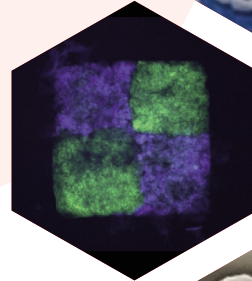
- Extracellular vesicles
- Senescence
- Autophagy
- Immune cells
- miRNA
- Endocrine regulation



Translational

Biomedical engineering for skeleton regeneration

- Hydrogels
- Cements
- Stem cells
- Organoids
- 3D printing
- Drug delivery systems
- Cell & gene therapy
- Surgical models



Skeletal inflammatory & chronic age-related disorders

- Osteoarthritis
- Rheumatoid arthritis
- Discarthrosis
- Bone & cartilage defects
- Periodontitis
- Tendinopathies

