



#### THE TEAM

##### 7 researchers

Karim BOUMEDIENE (PhD)  
Catherine BAUGE (PhD)

Sylvain LECLERCQ, PhD, MD  
Anne DOMPMARTIN, PhD, MD

Hervé BENATEAU, MD  
Céline BAZILLE, MD  
Alexis VEYSSIERE, MD

##### 2 technicians

Marion BERTHELOT

Quentin BRUEY

##### 3 PhD students + 1 post-doc

PROLIFERATION BIOINFORMATICS  
RADIOTHERAPY **MOLECULAR** ANIMAL GENETICS  
BIOMATERIAL TUMOR METHYLATION HISTONE  
METABOLISM **EPIGENETICS** COLLAGEN CELL REPAIR  
MODEL **PHYSIOPATHOLOGY** JOINT DNA **THERAPY**  
**BIOTECHNOLOGY** APOPTOSIS **HYPOXIA** SIGNALISATION  
**CANCER** CYTOKINE **CARTILAGE** GROWTH FACTORS  
**TRANSCRIPTION** **OSTEOARTHRITIS** **CHONDROCYTE**  
PHENOTYPE POLYMORPHISM REGULATION TENDON  
CELL ADHESION **TISSUE ENGINEERING** HYPERTROPHIA  
DEATH IMPLANTATION BONE **SYNOVIAL**  
**SKIN** **MECANISM** **GENE** **CHONDROSARCOMA**  
**STEM CELLS** TRANSCRIPTION PROTEIN

#### THE CURRENT PROJECTS

##### SURFACE

This **University Hospital Federation** aims to improve the **functional reconstruction after surgery of head and neck**. This program includes **fundamental and clinical research**, as well as the formation of medical and nursing staff, or student **teaching**. Our participation concerns the improvement of knowledge about cartilage formation and repair, and the setting of new protocols for **cartilage tissue engineering**.

##### EpiCart

By **in vitro** and **in vivo** strategies, this innovative project aims to investigate **epigenetic regulations** in normal and **osteoarthritic chondrocytes**, as well as during **chondrogenesis** and stem cell differentiation. The objective is to evaluate the potential therapeutic targeting histone methylation to treat osteoarthritis or to improve cartilage tissue engineering protocols.

##### Exorhum

This project in **clinical research** aims to identify new gene mutations involved in early onset **osteoarthritis** by **full-exome sequencing**.

##### CAEn

This emerging project aims to compare the response of **chondrosarcomas** (cartilage tumors) to several treatments (radiotherapy and hadrontherapy; chemotherapy; epigenetic therapy).

**Infantile Hemangioma**: Investigation through physical measurement monitoring



#### EXPERTISES

Biological research:  
in vitro and in silico

**Cell culture** (primary cells; hypoxia; 3D)

**Cell biology**

**Gene extinction**

**Biochemistry** (Elisa, Western-Blot)

**Molecular biology**, cloning

**Gene expression** (qPCR, EMSA, ChiP...)

Animal models:  
in vivo

**Genomic sequencing**

**Transcriptomics** (microarrays)

**Bioinformatics**

Preclinical/  
clinical trial

**Tumor xenograft**

**KO mice**

**Animal disease models**

X-rays radiations

<http://bioconnect.unicaen.fr/>

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