

UMR7268
MARSEILLE
BIOLOGY OF HUMAN BLOOD GROUPS

Team 4



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EFS representative

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R&D OFFER

- R&D collaborative projects
- Sponsored research agreements
- CIFRE PhD Thesis (French Industrial agreement of training through research)
- Internship in public-private cotutorship (Master, engineer or other students)
- Consulting / Expertise / Training
- Access to Technical Facilities
- Access to biological collections and databases (under conditions)

RESEARCH RECOGNITION

- CHAIR OF EXCELLENCE
- 8 INDUSTRIALS PARTNERS
- NATIONAL, EUROPEAN AND INTERNATIONAL GRANTS
- > 120 PUBLICATIONS (2016-2020) *SCIENTIFIC ARTICLES & BOOK CHAPTERS*
- QUALITY CERTIFICATIONS (ISO9001)
- 10 PHD STUDENTS AND POSTDOCS (2016-2020)
- PARTICIPATION TO EUROPEAN PROJECTS
- > 50 PARTICIPATIONS TO INTERNATIONAL CONFERENCES

RESEARCH AREA & OBJECTIVES

- **Red cells in health and disease, and during storage**
- **Blood group antigens and erythropoiesis:**
 - **Genetic diversity** (genotyping, clinical studies and databases)
 - **Structure and function** of membrane proteins
 - The **erythroblastic island** and **hematopoietic niche**
 - **Cellular crosstalk** (3D co-culture, signalling)
 - **Immortalized cell lines**
 - **hemoglobinopathies**
- **Tissue antigens, biomarkers of humoral and cellular alloreactivity:** HLA/HPA/HNA allo-immunization, humoral & cellular cytotoxicity, circulating DNA as rejection biomarker, immunotolerance
- **Blood cells and pathogens interactions: exosomal pathway**
- **Biological anthropology:** genetic diversity of blood groups, clinical studies and databases

KEYWORDS:

Red cells, normal and ineffective erythropoiesis, genetic diversity, non-classical HLA, inflammation and tolerance, biomarkers of alloreactivity, blood pathogens, hemoglobinopathies

DOMAINS OF EXPERTISE

- HEMATOLOGY
- GENETIC ANTHROPOLOGY
- VIROLOGY
- IMMUNOLOGY & IMMUNOGENETICS

SKILLS

- MOLECULAR AND CELLULAR BIOLOGY (qPCR, cloning, DNA Sequencing by NGS platform, genome editing, RNA expression, signalling, cell-cell interactions)
- CELL CULTURE (2D & 3D multicellular models, establishment of immortalised cell lines)
- FLOW CYTOMETRY (Multiparametric analyses and cell sorting)
- SOLUBLE FACTORS ANALYSIS (Luminex®)
- IMAGING (confocal & fluorescent microscopy)
- BIOMECHANICS AND MICROFLUIDICS
- MOUSE MODELS
- PRECLINICAL AND CLINICAL STUDIES

PLATFORMS & TECHNICAL RESSOURCES

- UMR7268 FACILITIES (MARSEILLE, PACA):
 - CELL CULTURE FACILITY
 - FLOW CYTOMETRY, LUMINEX® AND IMAGING FACILITY
 - NEXT GENERATION SEQUENCING
 - ANIMAL FACILITY
- ACCESS TO BIOLOGICAL COLLECTIONS: Healthy donors, patient & other biological samples – *under conditions*