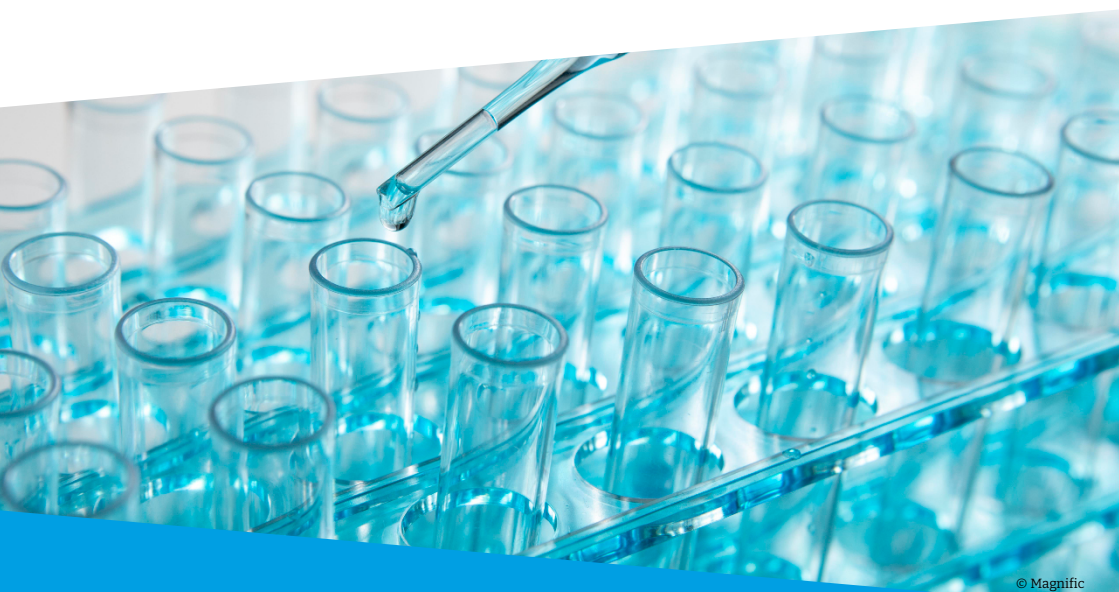


Department of Biological  
and Medical Sciences

# Discover the Platforms of the SBM Department



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Département de recherche  
SBM | Sciences  
biologiques et médicales / université  
de BORDEAUX



# Director's Message

Technology platforms are a major strategic asset for a research institution like the University of Bordeaux. They enhance the quality of research by providing researchers with the most innovative and high-performance analytical tools. They foster interdisciplinary and industrial collaborations. They address the need to optimize resources—both in terms of highly qualified personnel and investment in increasingly expensive technologies. They actively contribute to the training of future generations of researchers, who today include master's, doctoral, and postdoctoral students. Finally, they play a central role in the international standing of our research campus by helping to attract foreign researchers and facilitating access to international research networks.

Through their number and diversity, and through the advanced technologies they offer -some of which stem from their own research and development -the SBM Department's platforms contribute to the richness of the University's technological showcase. Whether they take the form of technical facilities or state-of-the-art scientific equipment housed within specialized infrastructures or laboratories, our technology platforms fully address all the research challenges of tomorrow, while helping to meet the challenges posed by societal and environmental transitions.

For all these reasons, the SBM Department strongly supports the activity and development of the technological platforms within its scope, through initiatives led by its dedicated working group. This support takes the form of targeted financial aid for the purchase of new equipment, and calls for scientific projects for platform use specifically dedicated to young doctoral and postdoctoral researchers, as well as technical staff of SBM units. Logistical support is also provided for all communication activities, whether on our website, at the scientific conferences of the communities and of the Department, and at the platform trade show. The objective of these actions is to raise awareness of their services among a much broader scientific community, in order to find new resources to ensure their development.

**Thierry Noël**

## Université de Bordeaux | Campus Carreire

146, Rue Leo Saignat  
33076 Bordeaux

### Bordeaux Biologie Santé Building

3<sup>rd</sup> floor :

- Aquitaine Microbiologie

4<sup>th</sup> floor :

- Aquiderm
- CellOxia Core Facility
- CRISP'edit

5<sup>th</sup> floor :

- FACSility
- Histopathologie
- OncoProt
- OneCell
- UB'L3
- Vect'UB
- VoxCell

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### IBIO Building

- Vivoptic

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### CARF: Centre d'Appui à la Formation et à la Recherche

- CBiB
- CELLOMET

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### IBGC Building

- Microscopy and Cell biology Service
- Molecular and Cell Imaging
- Service d'Analyses Métaboliques (SAM)

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## Institut Bergonié

229 cours de l'Argonne  
33076 Bordeaux

- POETIC

## Université de Bordeaux | Campus Bordes

Allée Geoffroy Saint Hilaire,  
33615 Pessac Cedex

- RNA Explore (Bâtiment B2, 1er étage)
- XenoFish (Bâtiment B2, 1er étage)

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# Support and Research Unit TBMCore Platforms



## Celloxia Core Facility

Scientific Director: Jean-Max Pasquet

Technical Director: Arnaud Villacreces

 arnaud.villacreces@u-bordeaux.fr

 05 57 57 15 79

 <https://www.tbmcore.cnrs.fr/celloxia/>

“Celloxia” core facility offers both expertise and equipment to incubate mammalian cells and/or perform experiments under controlled atmospheric conditions (O<sub>2</sub>, CO<sub>2</sub>, temperature) to academic and private laboratories.

You Can:

- Perform in vitro culture experiments under real tissue conditions,
- Use the services of the platform engineer to carry out an in vitro hypoxia study,
- To be advised in the design of a cell culture experiment in hypoxia.

Equipment: XVivo model X1 (Biospherix)

- 3 independent incubators with controlled atmosphere (O<sub>2</sub>, CO<sub>2</sub>, temperature)
- 1 workspace with controlled atmosphere (O<sub>2</sub>, CO<sub>2</sub>, temperature)
- 1 transfer chamber

**Key technologies:** Hypoxic cell culture



## CRISP'edit

Scientific Director: Béatrice Turcq

Technical Director: Valérie Prouzet-Mauleon

@ crispedit@u-bordeaux.fr

05 57 57 45 47

 <http://www.tbmcore.cnrs.fr/crisp-edit/>

- Conception and advice for genome editing experiments
  - Design of gRNA according to the project (Cas9, Cas12, Base-editing with variants of Cas9)
  - Genetic modifications in cell lines or primary cells : gene knockout, genomic deletions, point mutations, insertion of tags
  - Generation of clonal cell lines carrying genetic modifications in heterozygous or homozygous states
  - Using CRISPRi and CRISPRa tools to modulate gene expression
  - Genetic screens : Guidance for gRNA library selection and experimental design.
- Running experiments (excluding cell culture steps) to the bioinformatics analysis of deep-sequencing data

### **Key technologies:**

Genetic engineering of cell lines and primary cells with CRISPR tools



## **FACSility, Flow cytometry**

Scientific Director: Julie Dechanet Merville

Technical Director: Vincent Pitard

 [tbmcore-cytometrie@u-bordeaux.fr](mailto:tbmcore-cytometrie@u-bordeaux.fr)

 05 57 57 57 05

 <https://www.tbmcore.cnrs.fr/cytometry/?lang=en>

- Provision of equipment:
  - 5 analyzers including 1 Aurora spectral 5 lasers and 1 Symphony A3 5 lasers
  - 2 sorters, including 1 Aurora CS spectral 5 lasers
- Training for autonomous Immuno-phenotyping or sorting biological samples or particles in suspension on a selection of flow cytometer analyzers and sorter
- Sorting biological samples or particles
- Panel design and advice for labelling your samples
- Assistance and training for supervised or unsupervised data analysis in FlowJo

### **Key technologies:**

Cytometry conventional and spectral, analysis and sorting



## HISTOPATHOLOGIE

### Histopathologie

Scientific Director: Thomas Daubon

Technical Director: Nathalie Dugot-Senant

@ histopathologie@u-bordeaux.fr

05 57 57 48 78

 <https://www.tbmcore.cnrs.fr/histopathologie-bordeaux/>

Training in the various devices and provision of the following devices:

- Paraffin impregnation
- Inclusion bench
- Microtome sections
- Cryostat sections
- Autostainer for histological staining
- Autostainer for IHC and IF
- Briedfield microscope
- Confocal microscope

#### **Key technologies:**

New in the FACSility : MACSima system with MACSiQ image analysis software



## OncoProt

Scientific Director: Frédéric Saltel

Technical Director: Anne-Aur lie Raymond

@ anne-aurelie.raymond@inserm.fr

05 57 57 95 81

 <https://www.tbmcore.u-bordeaux.fr/oncoprot/>

- Analytical workflow design and development for exploratory and targeted proteomics studies.
- Expertise in a broad range of biological samples, including cells, fresh-frozen and FFPE tissues, spheroids, exosomes, secretomes, enriched subcellular fractions, immunoprecipitation eluates, biological fluids, and extracellular matrix samples.
- Sample preparation and protein extraction, including protein quantification, tissue sectioning, deparaffinization, histological staining, and laser capture microdissection (LCM) of fresh-frozen and FFPE tissues.
- Tailored sample processing, including TCA protein precipitation, conditioned media concentration, high-abundance protein depletion, and enrichment of modified peptides (e.g., phosphorylation, ubiquitination).
- Bottom-up proteomics sample preparation, including in-gel or automated SP3 magnetic bead-based protein digestion, desalting, and peptide cleanup.
- High-resolution LC-MS/MS analysis for discovery and targeted proteomics, with acquisition methods optimized according to sample type and experimental objectives, including mapping and characterization of post-translational modifications (PTMs).
- Mass spectrometry data processing and analysis, including protein identification, relative quantification, statistical analysis, and delivery of comprehensive result files.
- Bioinformatics, statistics, and scientific support, including clustering, Principal Component Analysis (PCA), predictive modeling, Leave-One-Out Cross-Validation (LOOCV), bootstrap analysis, biological interpretation of data, visualization, and graphical presentation.
- Specialized support for large-scale patient cohorts and translational research studies, from experimental design to biological interpretation.



## OneCell

Scientific Director: Myriam Capone  
Technical Director: Xavier Gauthereau



xavier.gauthereau@u-bordeaux.fr  
myriam.capone@u-bordeaux.fr



05 5 7 57 45 96



<https://www.tbmcore.cnrs.fr/onecell-2/>

- Quantification & Qualification of nucleic acids (RNA/DNA Integrity Number/Qubit/DS11/Agilent 4150)
- Panels and primer design, qRT-PCR
- Automated preparation of 384 well qPCR plates (epMotion 5073)
- Analysis of relative and absolute gene expression levels (Opus Bio-Rad 96 & 384)
- Digital PCR (Qiacuity Qiagen)
- Library construction for Single Cell analysis 10x Genomics (Chromium iX/X)
- Collaboration with UB'FACSility/Bordeaux for cell sorting, with PGTB/Cestas, Get-Plage/Toulouse Integrigen/Evry, Institut Curie/Paris for NGS

### **Key technologies :**

QPCR/Single Cell





## Service d'Analyses Métaboliques (SAM)

Scientific Director: Benoît Pinson

Technical Director: Corinne Buré

@ sam@ibgc.cnrs.fr

☎ 06 51 90 98 81 / 05 56 99 90 19

🌐 <https://www.tbmc core.cnrs.fr/sam/?lang=en>

- Guide you in the scientific design and technical implementation of your metabolic project.
- Provide quantitative metabolic data for water-soluble metabolites and lipids.

*Targeted analyses:*

*Quantification of few metabolites and/or one specific metabolic pathway and relative quantitation of targeted lipids.*

*Metabolic profiling:*

*Semi targeted analyses : metabolic profiling of ~250 water soluble metabolites covering most of the metabolic pathways and lipidomic profiling including phospholipids, ceramides, glucosylceramides, sulfatides, DAG and TAG.*

*Isotopic monitoring:*

*Determination of metabolic network topology for identification of new pathways/ enzymes, determination of linear/cyclic pathways, of pathway connection, of reaction reversibility, of metabolite uptake...*

- Assist you in the interpretation of your metabolic data from both our service or other metabolic services
- Train you in diverse scientific and technical aspects of sample preparation and metabolic analyses.

### **Key technologies :**

Liquid chromatography devices (uHPLC and u-HPIC) coupled to UV (mono wavelength and DAD; 190-800 nm), Fluorescence (200-900 nm), conductimetry and High Resolution Mass Spectrometry (Exploris 120) detectors



## Laboratoire L3

Scientific Director: Marie-Line Andreola  
Technical Director: Patricia Recordon -Pinson

@ ubl3@u-bordeaux.fr

☎ 05 57 57 17 60

🌐 <https://www.tbmcore.cnrs.fr/laboratoire-l3-bordeaux/>

- Biological safety level 3 training
- Class 3 pathogen experiments
- Production of class 3 viruses
- Study of infection on relevant cellular models (2D, 3D, small animal as zebrafish)
- Screening, toxicity or antiviral evaluation of molecules (retrovirus, arbovirus, respiratory virus)
- Access to fully equipped facilities for BSL3 requiring activities (vector production, oncogene manipulation)
- Preparation of samples for optical or electron microscopy

### Key technologies :

Class 3 pathogens, fully equipped BSL3 premises, academic institutions, private companies



## **Vect'UB**

Scientific Director: Véronique Guyonnet-Dupérat  
Technical Directors: Jennifer Cattiaux and Alice Bibeyran

@ vectub@u-bordeaux.fr

☎ 05 57 57 16 02 / 05.57.57.95.80

🌐 <https://www.tbmcore.cnrs.fr/vectorologie-bordeaux/>

- Scientific advice and support for gene transfer projects
- Recombinant plasmid design and construction
- Large-scale plasmid preparation (Maxiprep)
- Production of lentiviral vectors
- Production of AAV vectors
- Production of gamma-retroviral vectors
- Purification of adenoviral vectors
- Viral vector titration (flow cytometry, qPCR, dPCR, p24 assay)
- Generation of stable cell lines:
  - Gene overexpression
  - shRNA-mediated gene silencing
  - Cell immortalization

### **Key technologies:**

Construction of recombinant vectors, production of viral particules (AAV, Lentivirus, adenovirus), Generation of stable cell lines.



## **Vivoptic**

Scientific Director: Stéphane Mornet

Technical Director: Coralie Genevois

@ coralie.genevois@u-bordeaux.fr

☎ 05 57 57 47 50

🌐 <https://www.tbmcore.cnrs.fr/vivoptic/>

- Access to optical imagers and therapeutic equipments
- Mouse models generation, cell lines
- Practical advice for the experimentation and analysis part
- Collaboration on your research project

### **Key technologies:**

Optical imaging, therapies, mouse model



## **VoxCell**

Scientific and Technical Director:  
Laetitia Andrique

 laetitia.andrique@u-bordeaux.fr

 <https://www.tbmcore.cnrs.fr/voxcell-2/>

- Spherical alginate capsule production
- Tubular capsule production
- Cell preparation for encapsulation
- Design/analysis/results
- Training in the manipulation, preparation, tissue clearing, and mounting of 3D samples for 3D imaging
- 3D imaging support
- Perfusion system
- Stereomicroscope under sterile hood

### **Key technologies:**

3D cellular aggregates produced by encapsulation



### CBiB

Scientific Directors: Macha Nikolski and Alexis Groppi  
Technical Director: Aurélien Barré

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alexis.groppi@u-bordeaux.fr

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🌐 <https://www.cbib.u-bordeaux.fr>

The Bordeaux Bioinformatics Center (CBiB) is a bioinformatics core facility specialized in the analysis, integration, and interpretation of biological and medical data.

The platform supports researchers throughout all stages of their projects, from experimental design to advanced bioinformatics analyses and biological interpretation of results.

CBiB has expertise in the analysis of a wide range of omics data, including bulk and single-cell RNA sequencing, spatial transcriptomics, proteomics, metabolomics, variant analysis, microbiome studies, and medical imaging data. The platform develops and deploys customized bioinformatics and biostatistics workflows, databases, and software solutions tailored to the specific needs of research projects.

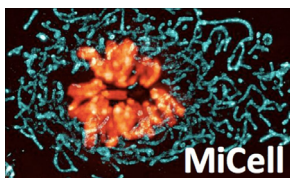
The platform also provides a high-performance computing infrastructure, including HPC clusters, GPU resources dedicated to artificial intelligence applications, and secure large-scale storage systems. Recent developments include the implementation of AI-based methods for the analysis of biological and medical data.

CBiB is certified ISO 9001:2015 and NFX 50-900:2016, holds the IBISA label, and contributes to national research infrastructures through the French Institute of Bioinformatics (IFB) and France Génomique.

#### **Key technologies :**

Single-cell RNA-seq, Spatial transcriptomics, Multi-omics data integration, Artificial Intelligence for Life Sciences, Variant analysis, Proteomics & Metabolomics, High-Performance Computing, Bioinformatics software development

## Core Facilities



### Microscopy and Cell biology Service (MiCell)

Scientific Director: Jim Dompierre

@ jim.dompierre@ibgc.cnrs.fr  
aurelie.massoni@ibgc.cnrs.fr

☎ 05 56 99 90 36

🌐 <https://www.ibgc.cnrs.fr/la-recherche/micell/>

- Scientific consulting and experimental design
- Sample preparation for photonic imaging (immunofluorescence, expansion microscopy)
- 3D reconstruction, visualization and quantitative analysis of biological structures
- Development and optimization of innovative preparation protocols
- Data interpretation and scientific support for research projects
- Quantitative analysis and data interpretation
- Training and expertise transfer in electron photonic microscopy and volume imaging expansion microscopy

*These services are provided by a technical team that works exclusively on a collaborative basis. This technical team does not constitute a service platform and does not issue invoice. Collaborative projects are subject to an agreement with the IBGC management team.*



## Molecular and Cell Imaging

Scientific Director: Bénédicte Salin

@ benedicte.salin@ibgc.cnrs.fr

05 56 99 90 14

 <https://www.ibgc.cnrs.fr/la-recherche/service-dimagerie-cellulaire-et-moleculaire/>

- Scientific consulting and experimental design
- Sample preparation and ultrastructural analysis by TEM and volume EM
- 3D reconstruction, visualization and quantitative analysis of biological structures
- Development and optimization of innovative preparation protocols
- Data interpretation and scientific support for research projects
- Quantitative analysis and data interpretation
- Training and expertise transfer in electron microscopy and volume imaging

*These services are provided by a technical team that works exclusively on a collaborative basis. This technical team does not constitute a service platform and does not issue invoice. Collaborative projects are subject to an agreement with the IBGC management team.*

### Key technologies:

Electron microscopy for cell biology, Volume electron microscopy (Serial Block-Face Scanning Electron Microscopy, Electron tomography), 3D image reconstruction and visualization, Advanced ultrastructural imaging and quantitative analysis, Immunoelectron microscopy



## POETIC

Scientific Directors: Frederic Delom and Delphine Fessart  
Technical Director: Delphine Fessart



frederic.delom@u-bordeaux.fr  
d.fessart@bordeaux.unicancer.fr



05 56 33 04 29



<https://bit.ly/poetic2>

### Description

- Quantitative detection of a broad range of biological targets, including:
  - o proteins;
  - o peptides;
  - o biomarkers in biological fluids;
  - o soluble extracellular factors.
- Based on ALPHA proximity-based luminescence technology.
- Highly sensitive and homogeneous detection method.
- Analysis of:
  - o biomolecular interactions;
  - o enzyme activities;
  - o cell-based responses.

### Services

- Quantification of biomarkers in biological fluids and complex biological matrices.
- Biomolecular interaction assays.
- Enzyme activity assays.
- Cell-based assays.
- Screening of chemical libraries.

### Key technologies

Automated pipeline of automated systems including: 96 Mini Janus head robot (MDT); Plate stacker; Janus (8 pins + gripper); EnVision reader (microplate).



## RNA Explore

Head: Majid Khatib

Scientific Coordinator: Virginie Dinet

Technical Directors: Walid Mahfouf and Élodie Muzotte

@ contact@rna-explore.com

☎ 05 40 00 34 57

🌐 <http://www.rna-explore.com/>

### Equipment

- Vizgen Merscope technique
- MERFISH-based spatial transcriptomics system
- High-resolution multiplex fluorescence imaging
- Automated Imaging and decoding workflows
- Computational infrastructure for spatial omics
- Processing environment

### Proposed Services

- Project feasibility assessment
- Experimental design and consultation
- Panel selection
- Recommendations for Tissue preparation (FFPE, Cryosectionning)
- Sample processing included recommendations quality control of tissue samples
- Automated multiplex fluorescence imaging
- Multi-round image acquisition

### Key technologies:

- Merscope-Vizgen
- MERFISH (Multiplexed Error-Robust Fluorescence In Situ Hybridization)
- High-plex spatial transcriptomics
- Spatial mapping - clustering
- In situ gene expression profiling
- Single-cell resolution mapping of tissue architecture
- Cell-cell interactions
- Differential expression analysis
- Spatial molecular signatures across a wide range of biological and clinical applications
- Cancer research, Neuroscience, Immunology, Developmental biology, Vascular research...



## **XenoFish**

Scientific Director: Geraldine Siegfried

Technical Director: Sandrine Fedou

@ contact@xenofish.com

☎ 05 40 00 87 10

www. http://www.xenofish.com

### **Proposed services**

- Production and supply of wild-type and transgenic zebrafish eggs, embryos, and adult fish
- Housing, breeding, and maintenance of zebrafish lines (>1,500 adult fish)
- Acute toxicity testing and LC50 determination
- Angiogenesis studies using fluorescent transgenic lines (Tg(fli1:eGFP))
- Tumor growth models, xenografts, and anticancer drug screening
- Inflammation models with fluorescent macrophage tracking (Tg(mpeg1))
- Tissue regeneration studies (caudal fin and injured tissues)
- Genetic disease modeling using CRISPR/Cas9 and morpholino technologies
- Therapeutic target validation and in vivo functional studies
- Scientific support and development of customized protocols for academic and industrial projects

### **Main equipment**

- 2 FemtoJet 4i microinjection workstations
- 1 Micromanipulation workstation with MOTICAM 1080N imaging system
- 1 KOFI Model 720 capillary puller
- 1 Echo fluorescence/transmitted-light microscope
- 1 Nikon Eclipse TS100 microscope
- 1 ECHO Revolve automated hybrid fluorescence microscope (upright and inverted)

### **Key technologies:**

Zebrafish, Oncology, Toxicology, Angiogenesis, Inflammation, Regeneration, Drug screening, Imaging, Genetics, CRISPR

# Technology Transfer Units



## Aquiderm

Scientific Directors: Julien Seneschal, Hamid-Reza Rezvani

Technical Directors: Jérôme Rambert, Muriel Cario

@ aquiderm@gmail.com

☎ 05 57 57 92 34

🌐 <http://www.aquiderm.com>

- Skin models (atopic dermatitis, vitiligo, melanoma, carcinoma, pigmentary disorders)
- Cytotoxicity
- Immunohistology
- Histology
- RT-QPCR
- Western blot
- Multiplex analyze (ELISA, FACS...)
- Microscopy electronic, photonic and fluorescence analyze of skin parameters
- Cell culture (keratinocytes, melanocytes, fibroblasts, endothelial cells, lymphocytes, telocytes, monocytes/macrophages, cancer cell lines....)
- YSI (glucose, lactate measure)
- Solar simulator
- UV irradiator

### Key technologies :

Skin models, cell culture primary cutaneous skin cells, pan analyze of Inflammation, global analyze of skin (photoprotection, ageing, anti-oxidant, pigmentation...)

# aquitaine microbiologie

## **Aquitaine Microbiologie**

Scientific Director: Frédéric Bringaud

Technical Director: Fatima M'Zali

 fatima.mzali@u-bordeaux.fr

 06 30 47 76 13

 <http://www.aquitaine-microbiologie.fr>

- High throughput antimicrobial compounds evaluation singly or in combination: determination of their spectrum of activity and prediction of resistance emergence
- Rapid diagnosis (rapid identification and characterization of pathogens / contaminants)
- Regulatory evaluation of medical devices
- Evaluation of the impact of xenobiotics on microbiota (skin, intestinal...) in in-vitro models (planktonic phase / presence of biofilm)
- Rapid epidemiological typing of strains by mass spectrometry
- Customized training of industrials in Microbiology (clinical microbiology, cosmetology...)
- Consultancy for industry (upstream or downstream their R&D projects)

### **Key technologies :**

- Mass spectrometry
- High throughput screening of antimicrobial compounds
- High throughput screening for antimicrobial resistance emergence and characterization of molecular determinants
- Culturomics approaches
- Cell culture
- Molecular microbiology approaches
- Epidemiological Typing by means of proteomic analysis



## CELLOMET

Scientific Director: Rodrigue Rossignol

Technical Director: Laetitia Dard

@ info@cellomet.com

☎ 06 17 93 49 49

🌐 <http://www.cellomet.com>

- Cell and tissue respiration (Seahorse XFe96) – Cytation; Oroboros
- Metabolic flexibility (Biolog)
- Mitochondrial morphology dynamics (MODL deeplearning)
- Enzymology
- ATP synthesis
- Mitochondrial biogenesis; mitophagy
- ROS and REDOX measurements
- Mitochondrial medicine: efficacy, mode of action (small molecules, antisense)
- Mitotoxicity; drug toxicity
- Pharma / cosmetics / academics

### Key technologies:

Energy metabolism investigation; metabolic reprogramming; mitochondrial physiology and pathology; epigenetics; Multi-Omics





En savoir +

<https://sbm.u-bordeaux.fr/>

