

SUPPORT LABORATORIES

ORGANISMS



TISSUES



CELLS



ORGANELLES



COMPLEXES



PROTEINS



ATOMS





BIOLABs & MFLab

Two BIOLABs, opened to users are available at SOLEIL, a L1 laboratory, BIOLAB1 and a L2 bacterial laboratory BIOLAB2.

A microfluidic laboratory, MFLab for inhouse development and scientific collaboration.

Bacterial Molecular Biology

- Biosafety cabinet (PSM) / Autoclave
- Incubators for bacteria growth / ice-machine
- Large volume centrifuge / sonicator
- PCR (thermocycler) / Agarose gel electrophoresis
- UV and visible Imager

Protein Biochemistry

- Sorbonne, scales & pH-meters
- Refrigerated centrifuges & ultracentrifuge
- Acrylamide electrophoresis
- AKTA Pure FPLC system (chromatography)

Macromolecular characterisation

- Spectrofluorimeter / DLS
- Agilent HPLC / SEC-MALLS-RI technique
- Agilent simple Quad Mass spectrometer

Storage & more ...

- -20°C & -80°C freezers
- Cold room at 4°C
- Cryomicrotome equipment



BIOLAB 2 (L2)

L2 safety level bacterial laboratory:

- 80m² including a cold room, -20 & -80°C freezers. Equipments for molecular biology (thermocycler) and under sterile conditions (PSM).
- Agarose electrophoresis, UV imager, Spectrophotometer
- Bacteria preparation and growth.
- Various chemical products to prepare solutions and buffers (scales, pH-meters and sorbonne).
- Large & small volumes refrigerated centrifuges



Protein biochemistry:

- Semi and preparative purification step with FPLC AKTA Pure system at 4°C.
- UV spectrophotometer
- Spectrofluorimeter
- Microscope (down to micron resolution).

Microfluidic lab

Microfluidic device fabrication in cleaned room:

- Design of homemade device & prototype with resins (PDMS, SU8, COC & Kapton).
- All the equipments for fabrication (sorbonne, spin coater, laser writer, plasma cleaner, profilometer).

Microfluidic device test:

- Elveflow OB1 pump
- Tubings & connectics (PEEK, FEP, FS)

BIOLAB 1 (L1)

Macromolecules caractérisation:

- 40m² with lab benches & equipments (hood, refrigerated centrifuges, freezers, AKTA FPLC system, dryheater, agitators..)
- Instruments to characterise/visualise your macromolecules in solution (Dynamic light Scattering, microscopes).
- Semi or analytic purification using the Agilent HPLC system, (SEC technique) or the SEC-MALLS-RI combined chromatography set-up.
- Mass spectrometry also available (Agilent simple quad system).



BIO-CELL lab

At the DISCO beamline annex : fully functional isolated cell culture room adjacent to live/cryo light microscopy laboratory. Cell culture lab includes:

- Dedicated eukaryotic cell culture hood
- Water jacketed CO₂ incubator (including shaker for suspension cells)
- HEK293 FS cell line available
- Tabletop centrifuges
- Binocular



Live microscopy: motorized stage live fluorescence microscope ix83 Olympus (20x, 40x, 100x objectives...brand, specificities)

Cryo preparation lab

Optimized cryoworkflow bench including:

- Plasma glow discharger (Pelco easiglow™)
- LEICA EM GP Automatic Plunge Freezer
- LINKAM stage equipped fluorescence microscope (BX43, Olympus) 50x, 100x LWD



SHG/TPFE microscopy



Multiphoton confocal Nikon A1 MP+ microscope



16x (NA 0.80), 25x (NA 1.1) and 40x (NA 1.25) LWD, water immersion objectives



Tunable Mai Tai XF mode-5 locked Ti:sapphire femtosecond laser (from 710 nm to 920 nm)



Eight GaAsP NDD detectors for backward and forward modes (360/12 nm, 406/15 nm, 460/60 nm, 550/88 nm)



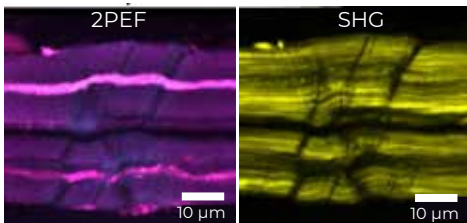
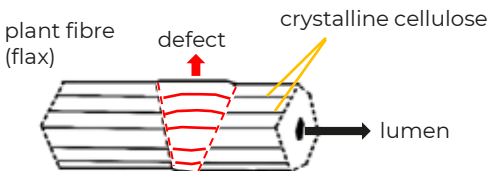
Two-photon excitation (TPFE) and Second Harmonic Generation (SHG) microscopy



Polarization angle control using half-wave plates



Acquisition of single images, mosaics, polarisations and Z stack



Melelli et al., Ind. Crops. Prod., 2021

Equipments access



BIOLABs are accessible during the beamtime (24/24, 7/7) with your badge after SUNset request acceptance.



For accessing SHG, biocell lab and/or cryo-preparation lab, please contact Frederic Jamme

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Health & Well-Being at SOLEIL



Link to the
web page

SOLEIL's Health and Well-being Scientific Section is composed of 30 scientific experts from different fields. Through collaborative and science-driven approaches, the Section offers the community a coherent portfolio of state-of-the-art techniques to serve scientific and societal health-related challenges.



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