The Functional Lipidomics platform is acknowledged by IBiSA (Infrastructure in Biology, Health and Agronomy). It is associated to the “GIS IMBL”, and located at the Pasteur-IMBL building of INSA-Lyon. The platform offers both expertise and assistance in lipidomics research.

It is open to the whole private and public scientific community interested in lipid projects by means of fee-based analytical services and collaborative projects.

Website: http://imbl.insa-lyon.fr/content/plateforme-de-lipidomique
**THE FUNCTIONAL LIPIDOMICS PLATFORM**

**Organizational Chart**

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- **Technical Director**: Michel Guichardant  
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**Technical Managers**

- **Technical Manager**: Patricia Daira  
  GC, GC-MS/MS

- **Technical Manager**: Baptiste Fourmaux  
  LC-MS/MS, HPLC

- **Technical Manager**: Patrick Molière  
  HPLC, GC
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Facilities

- Advices to set up lipidomics projects
- Theoretical and practical training in lipidomics
- Lipid analyses
- Technological survey
- Help in bringing projects to term
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❖ Wide range in lipid analyses

- Analysis of lipids involved in cell signalling

- Fatty acid profiles from phospholipids, triacylglycerols and sterol esters

- Analysis of phospholipid classes (including alkyl and alkenyl ether-linked phospholipids)

- Analysis of mono-, di- and tri-hydroxylated fatty acids

- Analysis of prostaglandins, leukotrienes

- Analysis of lipid peroxidation products (hydroxy-alkenals: 4-HNE, 4-HHE, 4-HDDE, isoprostanes, hydroxylated sterols…)

- Caracterization of lipid/protein interactions in Langmuir-Blodgett films

- Plasma lipoprotein profiles
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Equipments

- Gas Chromatography (GC)
- Liquid Chromatography (HPLC, UHPLC, FPLC)
- Gas-Chromatography coupled with tandem mass spectrometry (GC-MS/MS)
- Liquid-Chromatography coupled with tandem mass spectrometry (UHPLC-MS/MS)
- Polarization Modulation Infra-Red Reflection Absorption Spectroscopy (PM-IRRAS)
- Brewster Angle Microscopy (BAM)
Different organisms, matrices

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Various physiological and physiopathological states
**Examples of applications**

Representative UHPLC-MS/MS chromatogram of a wide chemical variety of oxylipin species

- Mono-hydroxylated fatty acids
- Di-hydroxylated fatty acids
- Tri-hydroxylated fatty acids
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Examples of applications

Typical GC-MS/MS profile of derivatized sterols
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Examples of applications

GC chromatogram of fatty acid methylesters

Typical chromatogram of different derivatized hydroxy-alkenals (GC-MS)

4-HHE

4-HNE

4-HDDE

Abundance

Time (min)