

THE FUNCTIONAL LIPIDOMICS PLATFORM

IBiSA

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>

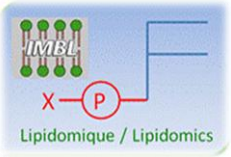
Scientific and technical Directors ::
Nathalie Bernoud-Hubac and Baptiste Fourmaux

LaMCoS
UMR 5259

INSA
INSTITUT NATIONAL
DES SCIENCES
APPLIQUÉES
LYON

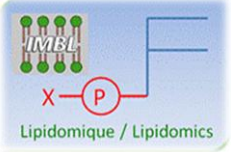


INSA
VALOR



Facilities

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



Services

❖ ANALYSES AND MOLECULAR CHARACTERIZATION OF LIPIDS

▪ STRUCTURAL LIPIDS

- Fatty acid profiles from sterol esters, triacylglycerols, phospholipids (classes, molecular species of phospholipids)
- Sterols and oxysterols

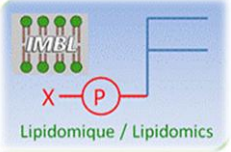
▪ SIGNALING LIPIDS

- Oxygenated metabolites (octadecanoids (HODEs...), eicosanoids, (prostanoids, leukotrienes...), docosanoids (protectins, maresins, resolvins...))
- Others: diacylglycerols, phosphatidate, sphingosine, sphingosine-1-phosphate

▪ MARKERS OF LIPID PEROXIDATION

- Isoprostanes
- Hydroxy-alkenals (4-HNE, 4-HHE...)

❖ BIOSYNTHESIS AND SYNTHESIS OF STRUCTURED LIPIDS



THE FUNCTIONAL LIPIDOMICS PLATFORM

IBISA

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)



GC-MS/MS
HP7890B/7000C



UHPLC-MS/MS
Shimadzu / AB Sciex
Qtrap 4500



UHPLC
Agilent 1200 series



GC
HP6890

Domains of applications

HEALTH

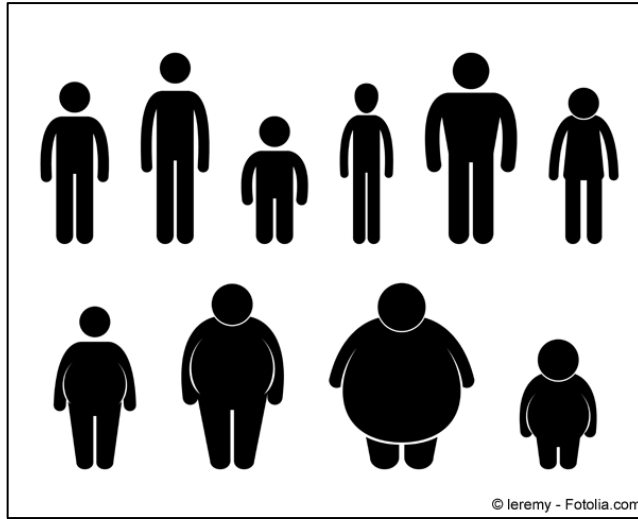
ENVIRONMENT

AGRI-
FOOD

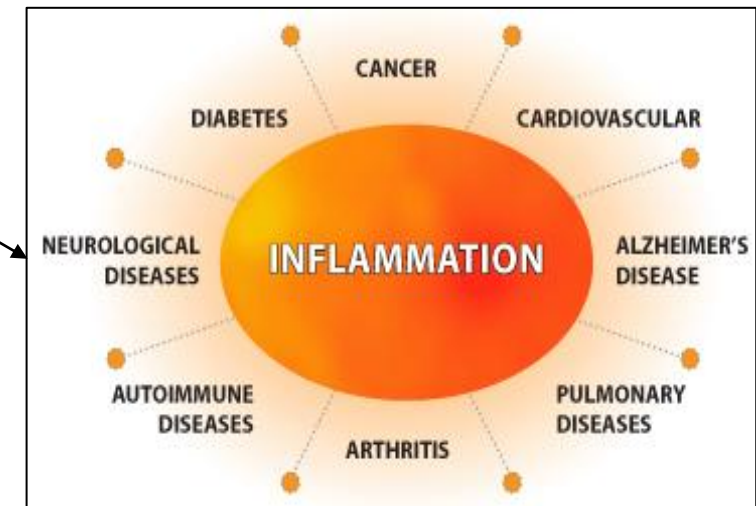
NUTRITION

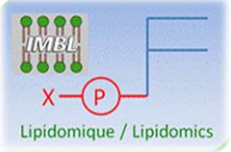
COSMETIC





Various physiological
and
physiopathological
states



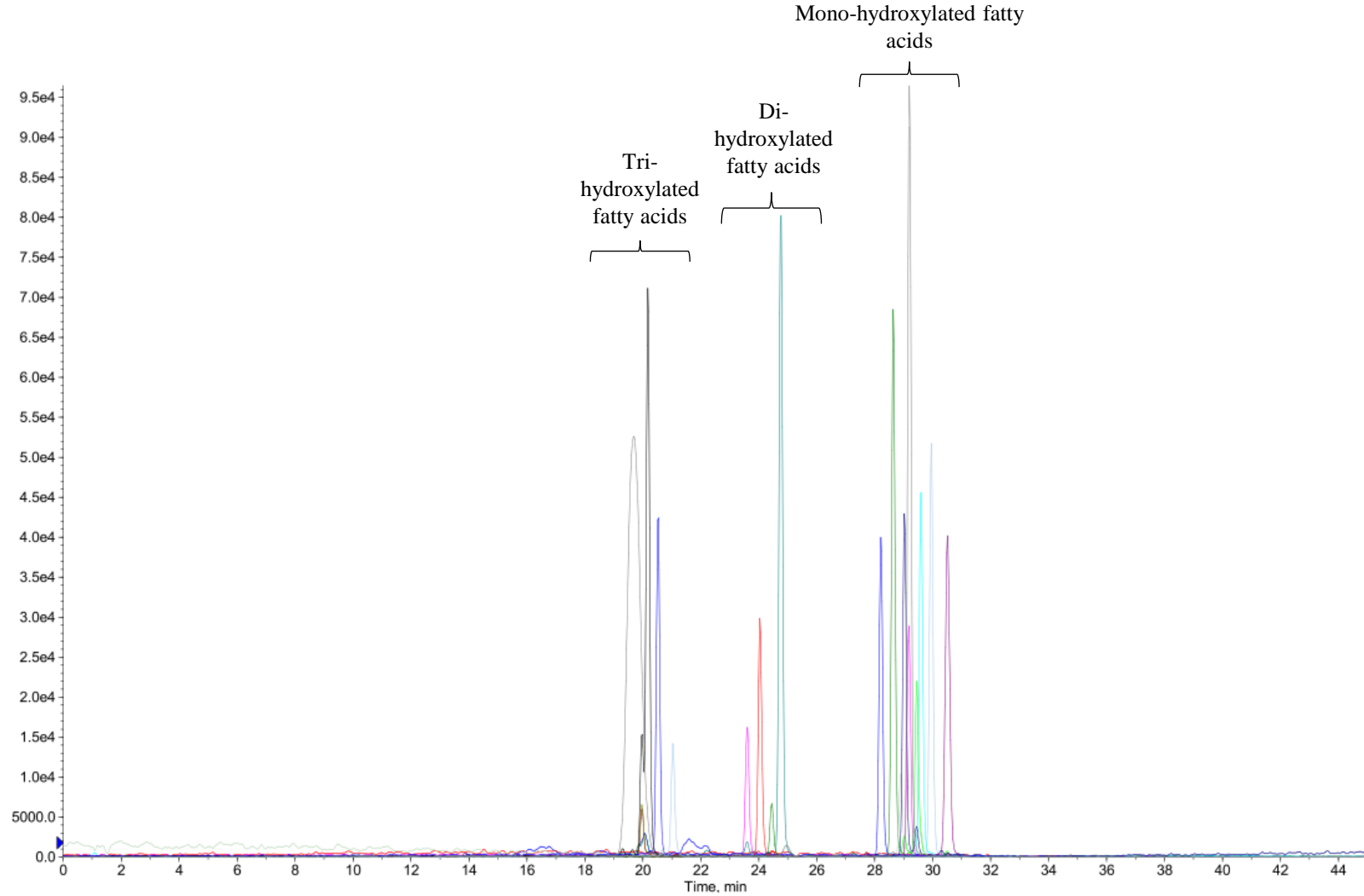


THE FUNCTIONAL LIPIDOMICS PLATFORM



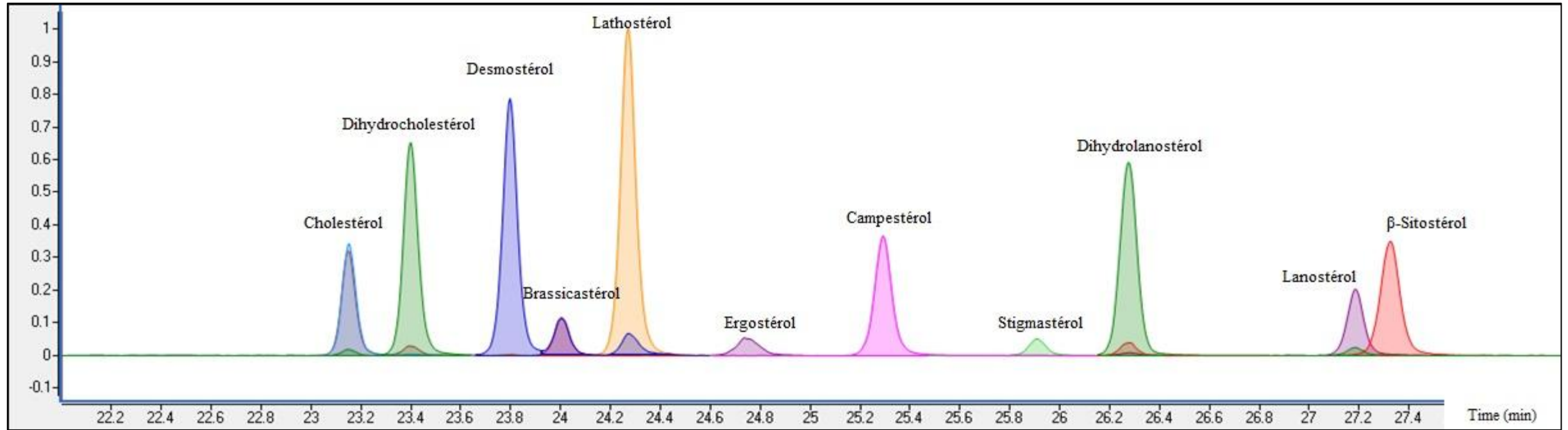
Examples of applications

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



Examples of applications

Typical GC-MS/MS profile of derivatized sterols



Examples of applications

Typical GC chromatogram of fatty acid methylesters

