



GENERALITAT
VALENCIANA



BANCO DE
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Instituto de Investigación
Sanitaria La Fe

Analytical Unit

TECHNOLOGY DESCRIPTION

The Analytical Unit (AU) is a support platform to the research of the Health Research Institute La Fe that provides a high quality service in biomedical research with analytical-scientific support necessary for the studies development based on, mainly, drugs and metabolomics. It offers its services to both, internal users of the IIS La Fe and external customers, including pharmaceutical, biotechnological and cosmetic companies.

The main goal of the AU is the development of bioanalytical methods for the identification and quantification of low molecular weight molecules, endogenous and exogenous, in different types of biological samples (serum, plasma, urine, cells, tissues, exudates and other biological fluids), and the safety evaluation of new bioactive compounds with clinical application.

SECTORS OF BUSINESS APPLICATION

The AU works following Good Laboratory Practice (GLP). The unit was pioneer in implement this quality standard in a hospital. This is essential to develop pharmaceutical and clinical studies that needs to present their results to the regulatory agencies (AEMPS, EMEA, FDA, etc.).

The AU owns analytical equipment basically based on last generation mass spectrometry and chromatography. Nowadays the machine available are:

- Liquid chromatographs coupled to triple quadrupole mass analysers:
 - UPLC-MSMS (QqQ) 1290-6460 Agilent
 - UPLC -TQ-S Xevo Waters
- Liquid chromatographs coupled to quadrupole-time of flight mass analysers
 - UPLC-MS (QToF) Acquity-Synapt G2-Si Waters
 - UPLC-MS (QToF) 6550 Agilent
- Gas chromatograph coupled to quadrupole-time of flight mass analysers
 - GC-MS (QToF) 7890A-7200 Agilent

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

The Analytical Unit is organized in three different platforms that offer analytical service for a wide variety of bioanalytical and clinical application studies.

PHARMA

Development and validation of analytical methods for drug and metabolite determination in biological matrices; assessment of enzymatic activities involved in drug biotransformation; structural elucidation of biomolecules and their metabolites; clinical pharmacokinetics and bioavailability studies.

METABOLOMICS

The metabolomics platform offers analytical services for the analysis of several endogenous metabolites in biological complex matrices.

- Targeted analysis: identification and quantification of endogenous metabolites previously selected.
- Untargeted analysis: unbiased metabolite profiling of biological samples determination. Metabolites (biomarkers) that are able to distinguish different types of samples can be identified with multivariate statistical methods.

The main applications of metabolomics include clinical applications such as biomarker discovery for diagnosis, prognosis and monitoring of some diseases, the study of molecules for a preclinical phase or therapy efficacy trials. The metabolic phenotype determination of a patient (metabotype) can be the beginning of the precision medicine to anticipate the efficacy of a treatment.

CUSTOM SERVICES

The AU offers also a platform of custom services for the researchers personal analytical need. The services are focussed on the development and validation of new analytical methods LC-MS/MS y GC-MS/MS for the identification of endogenous and exogenous metabolites in different types of matrices and tests design assessment.



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PARTNER SEARCHED

The AU collaborates with other biomedical institutions and companies, including pharmaceutical and biotechnological companies, for the development of applied research projects.

The AU looks for pharmaceutical, biotechnological and cosmetic companies that need analytical-scientific support for the development of studies based mainly in drugs and metabolomics.

IMAGES



CONTACT INFORMATION

Responsible scientists: José V. Castell, PhD, Agustín Lahoz, PhD

Analytical Unit staff:

Responsible: Marta Roca, PhD

Researchers: Marta Roca PhD, Marina López PhD

Technician: Sandra Montero

Tlf: 961246671/961246672

Emails:

analytical_unit@iislafe.es; marta_roca@iislafe.es; marina_lopez@iislafe.es; sandra_montero@iislafe.es

Health Research Institut La Fe

Avinguda de Fernando Abril Martorell, nº 106

46026 Valencia SPAIN



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