Core Facilities & Services

Genomics, Bioinformatics, Proteomics & Metabolomics

The Microarray Core Facility provides access to a full microarray service. This includes advice on experimental design and choice of technology platform, microarray manufacturing, labelling and hybridization, and image and data analysis. The facility supports Agilent and home-made microarray technologies. There is a Cluster of 6 PCs in the Genomics Facility with 1 GHz Pentium III dual processors, with a calculating capacity sufficient for all sequencing analyses and database services. The Proteomics facility conducts 2D and 2D-DIGE electrophoresis analysis and spot quantification to detect differential expression between samples. The service also offers protein purification procedures through different chromatographic techniques, including FPLC. The Metabolomics Core Resource at the IBMCP provides access to high-tech equipment necessary for chemical analysis of biological samples. The Service is available not only to IBMCP researchers, but also to external customers.

DNA Sequencing

The DNA Sequencing Service fulfilled the sequencing needs of not only the IBMCP, but also other research institutes, universities and hospitals in the Valencian Community. It also provides additional technical support to the Institute, including radioactive image analysis and quantitative PCR.

Computing

The IBMCP Computer service maintains a file and printing server, a web and E-mail server, a database search station, and a server for accounting and administrative management. The service is acquainted with different operative systems, such as the full Windows range, MacOS, UNIX and LINUX.

Library

The Library offers free access to an important collection of Electronic Journals and Databases, Interlibrary Loan and other library services. As a University-CSIC Research Institute, our Library has free access to the full collection of the UPV & CSIC through their Networks.

Greenhouses

The IBMCP has two Experimental Field Stations. The most recent one covers a surface area of 3,000 sq meters, and is one of the most technically advanced facilities in Spain to grow transgenic plants. It has a fully automated greenhouse surface of 1,500 sq meters in which all environmental parameters are controlled to ensure optimal conditions for plant growth. The remaining surface area is allocated to walk-in plant growth chambers, and other general uses.

Microscopy

The Microscopy lab offers equipment and assistance to process plant tissue samples for analysis at multiple optical levels. Different microscopy techniques and sample processing protocols are available, fixing and embedding plant tissues in paraffin, mRNA in situ hybridization, specific staining of cellular components, confocal microscopy, bioluminescence assays, laser capture micro-dissection of cells, etc.

Plant hormones quantification

This service has a Q-Exactive Unit (Orbitrap) for the quantitative determination of plant hormones in small samples that reaches a sensitivity of 0.01ng/g (ABA, Jasmonic acid, Salicylic acid, cytokinins, gibberellins, etc.) and extend this service for the University community and to other public national and international Organizations.

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Given that hormones participate in the regulation of almost all processes in plant development, this research line is focused on the study and manipulation of hormone metabolism, and on the molecular genetic analysis of hormone signal transduction pathways, including the interaction with environmental signals.

**Hormonal regulation of fruit-set & development**

Isabel López ilopez@ibmcp.upv.es

**Abscisic acid signaling**

Pedro L. Rodríguez prodriguez@ibmcp.upv.es

**Hormonal regulation of crosstalk between defence & development**

José León jleón@ibmcp.upv.es

**Hormonal signaling of senescence & development of reproductive organs**

Miguel A. Pérez-Amador imperez@ibmcp.upv.es
Maria Dolores Gómez mdgomez@ibmcp.upv.es

**Hormone signaling & plasticity**

Miguel A. Blázquez mblazquez@ibmcp.upv.es
David Alabadi dalabadi@ibmcp.upv.es

Induced resistance in Arabidopsis

Pablo Tornero ptornero@ibmcp.upv.es

Fine fitting of the hormonal responses

Alejandro Ferrando aferando@ibmcp.upv.es

Regulation of cellular differentiation in plants

Maite Sanmartín maite.sanmartin@ibmcp.upv.es

**Molecular & Evolutionary Plant Virology**

This research area is focused on the molecular biology of plant viruses and viroids, including the mechanisms underlying their replication, expression, movement, pathogenesis, and genome evolution.

- Molecular dissection of host-virus/viroid interactions
- Robust strategies for disease control that incorporate the dynamic nature of viral and viroidal populations
- Molecular methods for quick and reliable diagnosis of viruses and viroids affecting economically-relevant crops
- Transfer of results with added value to the biotechnology industry

**Viroids: structure, function & evolution**

Nicolás Flores niflores@ibmcp.upv.es

Plant molecular virology

Vicente Palau vpalau@ibmcp.upv.es
Jesús A. Sánchez jesanche@ibmcp.upv.es
Frederic Aparicio faparicio@ibmcp.upv.es

Molecular biology of viral & subviral plant pathogens

Carmen Hernández cahernan@ibmcp.upv.es

RNA-protein interactions in the infectious cycle of plant RNA pathogens

José Antonio Dávila jdariva@ibmcp.upv.es

Functional genomics & biotechnology of non-coding RNAs

Marcos de la Peña mrivero@ibmcp.upv.es

**Mechanisms of Stress Responses in Plants**

**Abiotic stress**

The main interest of this research line is to define the molecular mechanisms of the response and tolerance to abiotic stress generated by salt, drought, temperature (cold and high), acid and chemicals in plants. This knowledge should provide biotechnological tools for improving stress tolerance in agronomically-relevant crops. In addition, these approaches will unravel basic cellular mechanisms involved in the ‘acute response’ and adaptation to stress conditions.

**Ion homeostasis, cellular stress & genomics**

Ramón Serrano rserrano@ibmcp.upv.es
José Gadea j gadea@ibmcp.upv.es
Regina Niñoles reniories@upvnet.upv.es

**Regulation of plasma membrane transport proteins**

Lynne Yenush lynene@ibmcp.upv.es

**Molecular regulatory circuits in response to abiotic stress**

Amparo Pasqual–Ahuir apasqual@ibmcp.upv.es

**Cell growth & molecular targets of abiotic stress**

J. Miguel Mulet jmmulet@ibmcp.upv.es

**Biotic stress**

La línea de estrés biótico se centra en el estudio de los mecanismos que controlan la resistencia de las plantas a los patógenos e insectos utilizando aproximaciones bioquímicas y moleculares. El objetivo es determinar el papel señalizador de ciertos metabolitos y proteínas, disecionando el sistema de defensa de la planta.

**Signaling & response of plants to biotic stress**

Vicente Conejero vconejer@ibmcp.upv.es
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José María Belés jmbelies@btc.upv.es
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