

Cellular and Molecular Neuropharmacology



Contact at the Faculty of Pharmacy: Gontzal García del Caño, gontzal.garcia@ehu.eus

Scientific areas: Neuropharmacology, Neuroanatomy.

Keywords:

Endocannabinoid System, Cannabinoid Signalling, CB₁ Receptor, Phospholipase C-β1, Neuronal Differentiation, Radioligand Binding, Neurochemical and Biochemical Techniques, Immunodetection, Molecular Cloning, Cell Culture, Flow Cytometry, Molecularly Imprinted Polymers, TR-FRET.

Description

The group's research lies at the interface of **Neuropharmacology** and **Neuroanatomy** and uses multidisciplinary experimental approaches. Our work focuses on two main **basic-research** lines: cannabinoid CB₁ receptor-mediated signalling in the brain, and the role of phospholipase C-β1 (PLCβ1) in cell-cycle regulation and neural progenitor differentiation. The group also pursues translational research, including alterations of the brain endocannabinoid system in addictive disorders and the development and characterization of synthetic and biological tools for detecting and quantitatively analysing CB₁ receptors, including molecularly imprinted polymers. These lines are supported by competitive funding from the Basque Government and national R&D calls and are developed in collaboration with regional, national and international groups, including a long-standing collaboration with METABOLOMIPs in analytical chemistry and molecular imprinting technologies.

Further information: [Link](#)

Research lines

1. Biochemical characterization of brain cannabinoid CB₁ receptor-mediated signalling under physiological and pathological conditions.
2. Characterization of synthetic and biological tools for detecting and analysing CB₁ receptor expression, localization and signalling, including molecularly imprinted polymers and TR-FRET assays.
3. Phospholipase C-β1 (PLCβ1)-mediated signalling in cell-cycle regulation and neural progenitor differentiation.

Equipment

Equipment is distributed across laboratories of the Departments of Pharmacology and Neurosciences and shared facilities at the Faculty of Pharmacy and the Lucio Lascaray Research Centre (Álava Campus, UPV/EHU). The group has access to equipment for radioligand binding assays, subcellular fractionation of cells and tissues (high-speed centrifugation and ultracentrifugation), western blotting, spectrophotometric and luminometric measurements, TR-FRET assays, molecular cloning, classical histology, immunohistochemistry and immunofluorescence, high-resolution fluorescence microscopy (structured illumination), cell culture and flow cytometry.

Members of the group		E-mail	Department	Centre
Principal investigator	Gontzal <u>García del Caño</u>	<u>gontzal.garcia@ehu.eus</u>	Neurosciences	Fac. Pharmacy
Researchers	Maidier <u>López de Jesús</u>	<u>maider.lopez@ehu.eus</u>	Pharmacology	Fac. Pharmacy
	Sergio <u>Barrondo Lakarra</u>	<u>sergio.barrondo@ehu.eus</u>	Pharmacology	Fac. Pharmacy
	Imanol <u>González Burguera</u>	<u>imanol.gonzalez@ehu.eus</u>	Neurosciences	Fac. Pharmacy
	Miquel <u>Saumell-Esnaola</u>	<u>miquel.saumell@ehu.eus</u>	Pharmacology	Fac. Pharmacy
	Leire <u>Borrega Román</u>	<u>leire.borrega@ehu.eus</u>	Neurosciences	Fac. Pharmacy
Predoctoral students	Silvia <u>Iñiguez Barrio</u>	<u>silvia.iniguez@ehu.eus</u>	Pharmacology	Fac. Pharmacy