



Profolio of Researchers and Research Teams

APPLIED PHARMACOLOGY TO MEMBRANE BIOLOGY AND SIGNAL TRANSDUCTION MECHANISMS.

(Last update 03/04/2013)

Code: GI-1685

Department: Farmacoloxía; Bioloxía Celular e Ecoloxía;

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Contact:

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Research field

- Membrane biology and signal transduction mechanisms.
- New technologies in drug research. Pharmacogenomics and Pharmacogenetics
- Design of screening cascades. High Throughput Screening (HTS).
- Information technologies (IT) in continuous training for health professionals.
- Brain circuits and signal transduction in psychiatry
- Neurochemistry of GABAergic systems
- Extracellular matrix and neurla plasticity
- Membrane domains and neural plasticity
- Crosstalk between neurons and glia

Technology services

- Several research laboratories equipped with highly advanced pharmacological technology, binding and functional studies, screening cascades and High Throughput Screening, several units of cellular cultures, confocal microscopy, basic technologies in molecular biology. Electron microscopy, freeze-fracturing, Immunohistochemistry, in situ hybridization. Highly qualified scientific personal organized around project teams.

Key words

Cellular membrane proteins as pharmacological targets, G protein coupled receptors (GPCR), serotonin, 5-HT₂, schizophrenia, antipsychotics, molecular biomarkers in psychiatry, pharmaceutical care. Neuronal circuits, neural plasticity, glutamate, synaptic plasticity, reelin, extracellular matrix proteins.

Researchers

Name	Position
Loza García, M.I.	Coordinator
Cadavid Torres, M.I.	Member
Caruncho Michinel, H.J.	Member
Castro Pérez, M.d.	Member
García Alonso, Á.	Member
Atanes Juíz, P.	IFP
Crespo Vieira, A.	IFP
Fernández Parguñña, A.	IFP
Iglesias Fernández, A.	IFP
Lage Abad, S.	IFP
Nieto Gutiérrez, A.	IFP
Rodríguez Carracedo, J.	IFP
Romay Tallón, R.	IFP
Val García, C.	IFP
Brea Floriani, J.M.	PA
Comojo Figueira, M.	PA
Cuadrado Rodríguez, E.	PA
González Iglesias, S.	PA
Iglesias Fernández, M.I.	PA
Lestón Novoa, Ó.	PA
Mallo Lea, J.M.	PA
Piña Márquez, R.	PA
Ramos Caamaño, J.M.	PA
Rodríguez Ponte, C.	PA
Rosa Benito, I.	PA
Santamaría Pérez, J.M.	PA
Villar Rendo, M.	PA

External collaborators

Name	Institution
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RTD PROJECTS (period: 2009 - 2013)

Title:

REGID. Consolidacion e estruturacion de unidades de investigacion competitivas 2012. (Redes)

Tipology: (PG) Plan Galego

Duration: 17/06/2012 - 16/06/2014

Main investigator: Loza García, María Isabel

Title:

Drug Repositioning for Rare Diseases (DRUGS4RARE)

Tipology: (PI) Programas Internacionais

Duration: 01/02/2012 - 30/12/2013

Main investigator: Loza García, María Isabel

Title:

HUMANFARMA

Tipology: Outros Proxectos Nacionais

Duration: 04/05/2011 - 31/12/2013

Main investigator: Loza García, María Isabel

Title:

Polyfarma: nuevas terapias para Parkinson.

Tipology: Outros Proxectos Nacionais

Duration: 04/05/2011 - 31/12/2013

Main investigator: Loza García, María Isabel

Title:

An open, integrated and sustainable chemistry, biology and pharmacology knowledge resource for drug discovery (OPENPHACTS)

Tipology: Contratos coa UE

Duration: 01/03/2011 - 28/02/2014

Main investigator: Loza García, María Isabel

Title:

Análisis proteómico de las micropartículas y el secretoma de las plaquetas como fuente de biomarcadores para el síndrome coronario agudo

Tipology: Plan Nacional

Duration: 01/01/2011 - 31/12/2013

Main investigator: García Alonso, Ángel

Title:

Funcionalidade e regulación fisiolóxica dos homodimeros de GPCRS: o homodimero do receptor 5-HT2A.

Tipology: Proxectos Xunta

Duration: 10/08/2010 - 30/09/2013

Main investigator: Castro Pérez, María de los Ángeles

Title:

Identificación de novos compostos activos no receptor GPR35, un receptor orfo relacionado coa asma e a diabete.

Tipology: Proxectos Xunta

Duration: 08/08/2010 - 30/09/2013

Main investigator: Cadavid Torres, María Isabel

Title:

Cribado farmacolóxico de fármacos neurogénicos como tratamento innovador de enfermidades neurodegenerativas

Tipology: Plan Nacional

Duration: 01/01/2010 - 31/12/2012

Main investigator: Cadavid Torres, María Isabel

Title:

Contribución farmacolóxica a enfoques moleculares innovadores en farmacología antipsicótica

Tipology: Plan Nacional

Duration: 01/01/2010 - 31/12/2012
Main investigator: Loza García, María Isabel

Title:
An open, integrated and sustainable chemistry, biology and pharmacology knowledge resource for drug discovery.

Tipology: Proxectos Xunta
Duration: 01/01/2010 - 30/10/2010
Main investigator: Loza García, María Isabel

Title:
Identificación de biomarcadores plaquetarios en enfermedades cardiovasculares mediante proteómica clínica

Tipology: Proxectos Xunta
Duration: 22/09/2009 - 31/10/2012
Main investigator: García Alonso, Ángel

Title:
Cooperación transnacional para la innovación tecnológica en el desarrollo de moléculas para el tratamiento de la obesidad y la diabetes (DIOMED)

Tipology: Contratos coa UE
Duration: 01/04/2009 - 31/03/2012
Main investigator: Loza García, María Isabel

Technological customers and partners

- Almirall-Prodesfarma, S.A.
- BRAINco Biopharma, S.L.
- Bristol-Myers Squibb, S.A.U.
- Chemotargets, S.L.
- Duke University
- Fundación Mutua Madrileña Automovilista (MMA)
- Instituto de Biomedicina y Biotecnología de Cantabria
- Laboratorios Dr Esteve, S.A.
- Palo Biofarma, S.L.
- Peakdale Molecular Limited, Ltd
- Universidade do Minho
- VIVIA BIOSYSTEMS, S.L.

Patents

Application: P200301773
Application date: 25/07/2003

Title:
Método cuantitativo para la detección de yesotoxinas en productos pesqueros basado en la activación que la toxina produce en las fosfodiesterasas celulares y utilidad terapéutica de esta activación.

Inventors:

- Alfonso Rancaño, María Amparo
- Botana López, Luis Miguel
- Loza García, María Isabel
- Pazos Guldrís, María José
- Rodríguez Vieytes, María de las Mercedes

Application: P200402944

Application date: 25/07/2003

Title:

UTILIZACION TERAPEUTICA DE LAS YESSOTOXINAS COMO INHIBIDORES DEL CRECIMIENTO DE CELULAS TUMORALES HUMANAS.

Inventors: - Alfonso Rancaño, María Amparo
- Botana López, Luis Miguel
- Loza García, María Isabel
- Rodríguez Vieytes, María de las Mercedes

Application: P200402943

Application date: 25/07/2003

Title:

UTILIZACION DE LAS YESSOTOXINAS EN EL TRATAMIENTO DE PROCESOS ALERGICOS Y ASMATICOS

Inventors: - Alfonso Rancaño, María Amparo
- Botana López, Luis Miguel
- Loza García, María Isabel
- Rodríguez Vieytes, María de las Mercedes

SCIENTIFIC PRODUCTION (period: 2007 - 2011)

Articles in scientific journals

Article:

Discovery and Characterization of 4' -(2-Furyl)-N-pyridin-3-yl-4,5'-bipyrimidin-2'-anime (LAS38096), a Potent, Selective, and Efficacious A (2B) Adenosine Receptor Antagonist.

Journal: JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0022-2623
2007

Article:

Extensive linkage disequilibrium mapping at HTR2A and DRD3 for schizophrenia susceptibility genes in the Galician population

Journal: SCHIZOPHRENIA RESEARCH, ISSN: 0920-9964
2007

Article:

Syntheesis and Binding Affinity of New Pyrazole and Isoxazole Derivatives as Potential Atypical Antipsychotics

Journal: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, ISSN: 0960-894X
2007

Article:

Multi-structure 3D-QSAR studies on a series of conformationally constrained butyrophenones docked into a new homology model of the 5-HT2A receptor

Journal: JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0022-2623
2007

Article:

Design, Synthesis, and Structure-Activity Relationships of a Novel Series of 5-Alkylidenepyridazin-3(2H)-ones with a Non-cAMP-Based antiplatelet Activity

Journal: JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0022-2623
2007

Article:

Synthesis, adenosine receptor binding and 3D-QSAR of 4-substituted 2-(2'-furyl)-1,2,4-triazolo(1,5-a)quinoxalines

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2008

Article:

1-,3- and 8-substituted-9-deazaxanthines as potent and selective antagonists at the human A(2B) adenosine receptor.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2008

Article:

Synthesis of new mannosyl, galactosyl and glucosyl theophylline nucleosides with potential activity as antagonists of adenosine receptors. DEMA-induced cyclization of glycosylideneiminouracils.

Journal: CARBOHYDRATE RESEARCH, ISSN: 0008-6215
2008

Article:

A new Chemicals tool (C0036E08) supports the role of adenosine A2B receptors in mediating human mast cell activation.

Journal: BIOCHEMICAL PHARMACOLOGY, ISSN: 0006-2952
2008

Article:

Synthesis, Binding, Binding Affinity, and Molecular Docking Analysis of New Benzofuranone Derivatives as Potential Antipsychotics

Journal: JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0022-2623
2008

Article:

1,2-Dialkyl-8-(hetero)aryl-9-OH-9-deazaxanthines as potent A(2B) adenosine receptor antagonists: Design, synthesis, structure-affinity and structure-selectivity relationships.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2008

Article:

Psychosocial and behavioural determinants of the implementation of Pharmaceutical Care in Spain.

Journal: PHARMACY WORLD & SCIENCE, ISSN: 0928-1231
2009

Article:

Synthesis, Binding Affinity and SAR of New Benzolactam Derivatives as Dopamine

Journal: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, ISSN: 0960-894X
2009

Article:

Evidence for distinct antagonist-revealed functional states of 5-HT_{2A} receptor homodimers

Journal: MOLECULAR PHARMACOLOGY, ISSN: 0026-895X
2009

Article:

An upregulation of DNA-methyltransferase 1 and 3a expressed in telencephalic GABAergic neurons of schizophrenia patients is also detected in peripheral blood lymphocytes.

Journal: SCHIZOPHRENIA RESEARCH, ISSN: 0920-9964
2009

Article:

1,3-Dialkyl-8-N-substituted benzyloxycarbonylamino-9-deazaxanthines as potente adenosine receptor ligands: Desig, synthesis, sructure-affinity and structure-selectivity relationships.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2009

Article:

Identification of Novel Scaffolds from an Original Chemical Library as Potential Antipsychotics

Journal: QSAR & COMBINATORIAL SCIENCE, ISSN: 1611-020X
2009

Article:

Chitosan-hyaluronic acid nanoparticles loaded wit heparin for the treatment of asthma.

Journal: INTERNATIONAL JOURNAL OF PHARMACEUTICS, ISSN: 0378-5173
2009

Article:

Synthesis and binding aaffinity of potential atypical antipsychotics with the tetrahydroquinazolinone motif.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2009

Article:

Synthesis and pharmacological evaluation of novel 1-and 8-substituted-3-furfurylxanthines as adenosine receptor antagonists.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2009

Article:

Chitosan-hylaruronic acid nanoparticles loaded with heparin for the treatment of asthma.

Journal: INTERNATIONAL JOURNAL OF PHARMACEUTICS, ISSN: 0378-5173
2009

Article:

Divergent solution-phase síntesis of diarylpyrimidine libraries as selective A3 adenosine receptor antagonists.

Journal: JOURNAL OF COMBINATORIAL CHEMISTRY, ISSN: 1520-4766
2009

Article:

Identification of PHE3697.38 of the human 5-HT7 receptor in interaction with receptor specific antagonists by molecular modellin, site-directed mutagenesis and affinity studies.

Journal: BRITISH JOURNAL OF PHARMACOLOGY, ISSN: 0007-1188
2009

Article:

Proteomic analysis of integrin alphallbbeta3 outside-in signaling reveals Src-kinase-independent phosphorylation od Dok-1 and Dok.3 leading to SHIP-1 interactions.

Journal: THROMBOSIS AND HAEMOSTASIS, ISSN: 0340-6245
2009

Article:

Pretoxic analysis of HepaRG cells: a novel cell line that supports hepatitis B virus infection.

Journal: JOURNAL OF PROTEOME RESEARCH, ISSN: 1535-3893
2009

Article:

Decreased levels of disrupted-in-schizophrenia 1 (DISC1) are associated with expansion of the dentate granule cell layer in normal and kindled rats

Journal: NEUROSCIENCE LETTERS, ISSN: 0304-3940
2009

Article:

Repeated exposure to corticosterone, but not restraint, decreases the number of reelin-positive cells in the adult rat hippocampus

Journal: NEUROSCIENCE LETTERS, ISSN: 0304-3940
2009

Article:

The effect of amygdala kindling on hippocampal neurogenesis coincides with decreased reelin and DISC1 expression in the adult dentate gyrus

Journal: HIPPOCAMPUS, ISSN: 1050-9631
2009

Article:

Phe369(7.38) at human 5-HT₇ receptors confers interspecies selectivity to antagonists and partial agonists

Journal: BRITISH JOURNAL OF PHARMACOLOGY, ISSN: 0007-1188
2010

Article:

A novel multilevel statistical method for the study of the relationships between multireceptorial binding affinity profiles and in vivo endpoints.

Journal: MOLECULAR PHARMACOLOGY, ISSN: 0026-895X
2010

Article:

Emerging opportunities and concerns for drug discovery at serotonin 5-HT_{2B} receptors.

Journal: CURRENT TOPICS IN MEDICINAL CHEMISTRY, ISSN: 1568-0266
2010

Article:

Synthesis of theophylline derivatives and study of their activity as antagonists at adenosine receptors.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2010

Article:

In silico directed chemical probing of the adenosine receptor family.

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2010

Article:

Synthesis and pharmacological evaluation of novel substituted 9-deazaxanthines as A2B receptor.

Journal: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0223-5234
2010

Article:

Synthesis and pharmacological evaluation of novel 1,3,8- and 1,3,7,8-substituted xanthines as adenosine receptor antagonists

Journal: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0223-5234
2010

Article:

Synthesis, 3D-QSAR, and Structural Modeling of Benzolactam Derivatives with Binding Affinity for the D2 and D3 Receptors

Journal: ChemMedChem, ISSN: 1860-7179
2010

Article:

Pyrazolo[1',5':1,6]pyrimido[4,5-d]pyridazin-4(3H)-ones as selective human A1 adenosine receptor ligands

Journal: BIOORGANIC & MEDICINAL CHEMISTRY, ISSN: 0968-0896
2010

Article:

Identification of novel, species selective agonists of the G protein-coupled receptor GPR35 that promote recruitment of β -arrestin-2 and activate G β 13.

Journal: BIOCHEMICAL JOURNAL, ISSN: 0264-6021
2010

Article:

Inhibition of P-glycoprotein pumps by PEO-PPO amphiphiles: branched versus linear derivatives.

Journal: Nanomedicine, ISSN: 1743-5889
2010

Article:

Proteins involved in platelet signaling are differentially regulated in Acute Coronary Síndrome: a proteomic study

Journal: PLoS One, ISSN: 1932-6203
2010

Article:

Clinical proteomics in platelet research: challenges ahead

Journal: JOURNAL OF THROMBOSIS AND HAEMOSTASIS, ISSN: 1538-7933
2010

Article:

Association of community-acquired pneumonia with antipsychotic drug use in elderly patients: a nested case-control study.

Journal: ANNALS OF INTERNAL MEDICINE, ISSN: 0003-4819
2010

Article:

Pyrimidine derivatives as potent and selective A3 adenosine receptor antagonists

Journal: JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0022-2623

2011

Article:

Discovery of LAS101057: A Potent, Selective, and Orally Efficacious A2B Adenosine Receptor Antagonist

Journal: ACS Medicinal Chemistry Letters, ISSN: 1948-5875
2011

Article:

Synthesis of novel chromene scaffolds for adenosine receptors

Journal: ORGANIC & BIOMOLECULAR CHEMISTRY, ISSN: 1477-0520
2011

Article:

Sensitization to MDMA locomotor effects and changes in the functionality of 5-HT_{2A} and D₂ receptors in mice

Journal: INTERNATIONAL JOURNAL OF CARDIOLOGY, ISSN: 0167-5273
2011

Article:

Potential atypical antipsychotics: synthesis, binding affinity and SAR of new heterocyclic bioisosteric butyrophenone analogues as multitarget ligands.

Journal: MedChemComm, ISSN: 2040-2503
2011

Article:

On a possible neutral charge state for the catalytic dyad in β -secretase when bound to hydroxyethylene transition state analogue inhibitors.

Journal: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, ISSN: 0223-5234
2011

Article:

Variations in platelet proteins associated with ST-elevation myocardial infarction: novel clues on pathways underlying platelet activation in acute coronary syndromes.

Journal: ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY, ISSN: 1079-5642
2011

Article:

High-resolution two-dimensional gel electrophoresis analysis of atrial tissue proteome reveals down-regulation of fibulin-1 in atrial fibrillation

Journal: INTERNATIONAL JOURNAL OF CARDIOLOGY, ISSN: 0167-5273
2011

Article:

Convergent Assembly of Structurally Diverse Quinazolines

Journal: ORGANIC & BIOMOLECULAR CHEMISTRY, ISSN: 1477-0520
2011

Article:

Reelin as a putative vulnerability factor for depression: Examining the depressogenic effects of repeated corticosterone in heterozygous reeler mice.

Journal: NEUROPHARMACOLOGY, ISSN: 0028-3908
2011

Book:

Title:

Reflexiones sobre la información en investigación y desarrollo de medicamentos
(978-84-8124-) Publicación: 2007

Editorial:Prous Science S A

Title:

Platelet proteomics: Principles, analysis and applications
(978-0-470-46337-6) Publicación: 2011

Editorial:Wiley & Sons, USA

Chapter:

Title:

El autoconsumo de medicamentos

Book:

La proyección social del medicamento

(978-84-93546)Publicación: 2007

Editorial:Fundación Dr. Antonio Esteve

Title:

Allosteric modulation of 5-HT_{2B} receptors by celecoxib and valdecoxib. Putative involvement in cardiotoxicity

Book:

Advances in biomedical informatics: COMBIOMED

(978-84-9749-477-9)Publicación: 2011

Editorial:Universidade de A Coruña

Title:

Two-dimensional gel electrophoresis: basic principles and application to platelet signaling studies

Book:

Platelet proteomics: Principles, analysis and applications

(978-0-470-46337-6)Publicación: 2011

Editorial:Wiley & Sons, USA

Doctoral theses:

Title:

Análisis comparativo de la interacción ligando-receptor entre sistemas nativos y recombinantes: comportamiento conformacional de GPCRs.

Date of dissertation: 21/09/2007

Director: María Isabel Loza García, María Isabel Cadavid Torres

Author: Juan Fernando Padín Nogueira

Title:

Estudio de la variabilidad genética y de la expresión de los receptores 5-HT_{2A} de serotonina y D₃ de dopamina como biomarcadores candidatos en la esquizofrenia

Date of dissertation: 13/04/2007

Director: María Isabel Loza García, Ángel María Carracedo Álvarez

Author: Eduardo Domínguez Medina

Title:

Análisis de la utilización de antibióticos en la profilaxis de la infección perinatal. Implicaciones en el ámbito hospitalario

Date of dissertation: 18/02/2008

Director: María Isabel Cadavid Torres, Jose Ramon Lorenzo, Carmen María Cadarso Suárez

Author: Iria Blanco Barca

Title:

EXPRESIÓN E MECANISMOS FUNCIONAIS DA PROTEÍNA DA MATRIZ EXTRACELULAR -REELINA- DURANTE O DESENVOLVEMENTO PRENATAL DO ENCÉFALO DE ROEDORES

Date of dissertation: 27/01/2010

Director: Hector Juan Caruncho Michinel, Miguel Ángel Rodríguez Díaz

Author: Iria M^a González-Dopeso Reyes

Title:

Deseño, implantación e análise de un modelo para a xestión do seguemento farmacoterapéutico nunha farmacia comunitaria

Date of dissertation: 14/10/2011

Director: María Isabel Loza García, BREA FLORIANI, JOSE MANUEL

Author: M^a Belén Cobián Rodríguez

Title:

Estudo do rato heterocigoto reeler como modelo animal in vitro da esquizofrenia. Caracterización farmacolóxica dos receptores D2 e 5-HT2A.

Date of dissertation: 18/05/2011

Director: María Isabel Loza García, BREA FLORIANI, JOSE MANUEL

Author: María José Varela Liste

Title:

AVALIACIÓN E COSTES DOS TRATAMENTOS DIRECTAMENTE OBSERVADOS EN TUBERCULOSE

Date of dissertation: 16/11/2011

Director: María Isabel Cadavid Torres, García Ramos, María del rosario

Author: Beatriz Mejuto Pérez del Molino
