

CATALOGUE

Experimental Health Sciences



Universidad
de Alcalá



Comunidad
de Madrid

Dirección General de Investigación
e Innovación Tecnológica

CONSEJERÍA DE CIENCIA,
UNIVERSIDADES E INNOVACIÓN



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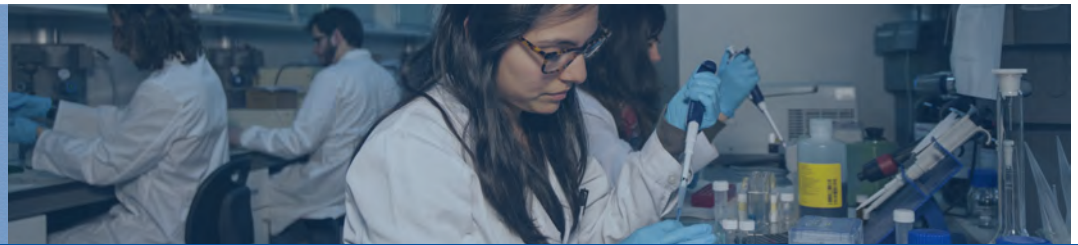
Listado grupos de investigación UAH

Experimental and Health Sciences

- ADENOCARCINOMA & METASTASIS
- CANCER DRUG RESISTANCE
- BIOANALYSIS AND BIOSENSORS
- BIODIAGNOSTICS AND METABOLOMICS
- BIOSENSING AND SUPRAMOLECULAR CHEMISTRY
- MICROBIAL AND PARASITIC BIOTECHNOLOGY AND ECOLOGY
- CANCERS OF EPITHELIAL ORIGIN
- CELL DAMAGE ASSOCIATED WITH SENESCENCE a
- DEVELOPMENT AND APPLICATION OF MOLECULAR MARKERS IN PLANTS
- DIABETES, OBESITY AND HUMAN REPRODUCTION
- DESIGN, INTERACTION AND SYNTHESIS OF BIOACTIVE COMPOUNDS
- HUMAN DIVERSITY AND APPLIED ANTHROPOLOGY
- GLOBAL CHANGE ECOLOGY AND EVOLUTION
- ORGANIC ELECTROSYNTHESIS
- MICROBIAL DEGRADATION OF LIGNOCELLULOSE: TECHNOLOGICAL APPLICATIONS
- HETEROBETAINES
- TRASLATIONAL RESEARCH IN CHRONIC DISEASES ASSOCIATED TO AGING AND KIDNEY DISEASE
- MECHANISM OF ACTION OF BIOLOGICALLY ACTIVE COMPOUNDS
- DENDRITIC NANOSYSTEMS FOR BIOMEDICAL APPLICATIONS
- BIOLOGICAL CHEMISTRY



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MICROBIAL AND PARASITIC BIOTECHNOLOGY AND ECOLOGY

Código
582

BIOTEMYP

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATOR

José L. Copa-Patiño
Francisco J.
Martínez-González

KEYWORDS

Biocidal compounds,
Dendritic compounds,
Microbial biofilms,
Microbial biotechnology,
Microbial taxonomy,
Hemoparasites: geographical
distribution

AIM

- Any type of company where microorganisms have a fundamental role

CONTACT



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Biomedicina y Biotecnología
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ABOUT US

We are a group interested in investigating certain aspects of microorganisms and parasites and applying this knowledge in different biotechnological, environmental or health fields.

RESEARCH LINES

- Studies on the production and biocidal effect of new synthesis molecules: dendritic compounds
- Taxonomic studies of microorganisms
- Incidence and distribution of hemoparasites in wild birds and micro-mammals

OFFERED SERVICES

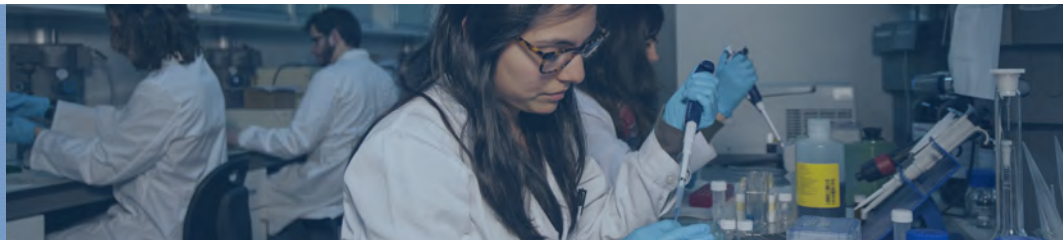
- Environmental audits of aerial, surface, final product, etc. environments in different types of industries
- Identification of microorganisms that may interest different types of industries or organisms
- Optimization of industrial processes where microorganisms or molecules produced by them have a fundamental role

MARKETABLE RESULTS





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DESIGN, INTERACTION AND SYNTHESIS OF BIOACTIVE COMPOUNDS

Code
664

DISCOBAC

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATORS

Lourdes Gude Rodríguez
Eva Royo Cantabrana

KEY WORDS

Cancer, Alzheimer,
Multifunctional organic
and metallo-organic
ligands, G-quadruplex
DNA, RNA, Modeling and
interaction studies

AIM

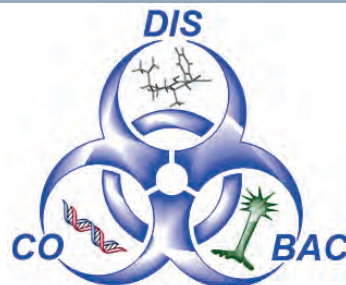
- Chemical sector,
pharmaceutical and
healthcare

CONTACT



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Química Inorgánica
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ABOUT US

We are an interdisciplinary group of professional researchers covering inorganic and organic chemistries as well as biochemistry and molecular biology related aspects, working together in the discovery of novel and enhanced theragnostic molecules with a special focus on cancer and neurodegenerative diseases.

RESEARCH LINES

- Synthesis and interaction studies of selective G-quadruplex DNA ligands by the design of multifunctional metallo-organic molecules. Examples include carbohydrate or oligonucleotide conjugates for their use as therapeutic agents and the study of the structure-activity relationships and interactions of synthesized compounds with higher-order DNA/RNA structures.
- Design and synthesis of novel biologically active molecules using molecular modeling. Building up of three-dimensional models of receptors and ligands to study the nature and magnitude of the interatomic forces that govern their interactions.

OFFERED SERVICES

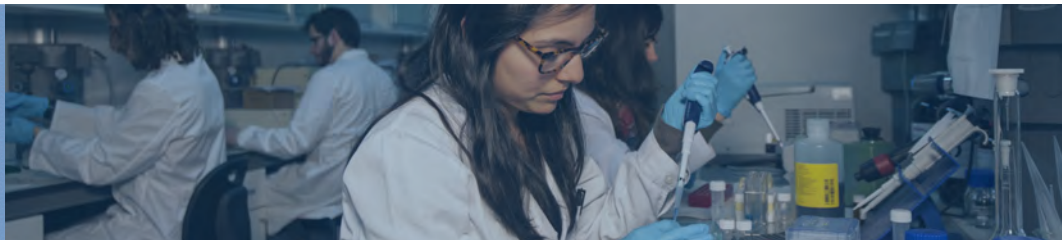
- Synthesis, characterization and reactivity studies of organic, organometallic and coordination compounds.
- Design and structural characterization of nucleic acids and/or protein ligands.
- Biomolecular interaction studies by theoretical and experimental methods, such as competition equilibrium dialysis, FRET melting assays, viscometric titrations, circular dichroism, fluorescence-based techniques, UV-visible, etc.

MARKETABLE RESULTS





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ORGANIC ELECTROSYNTHESIS

Code
682

EOS

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATOR

María Belén Batanero
Hernán

KEY WORDS

Electrochemistry, Reaction
Mecanism,
Radical intermediates,
ion-radical intermediates,
Electrodes, Heterocyclic
compounds,
Electrogenerated bases,
Electro-mediated (indirect)
processes, Electrocatalysis

AIM

- Pharmaceutical industry
- Energetic and sustainable Industry
- Perfume industry

CONTACT



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ORGANIC ELECTROCHEMISTRY

ABOUT US

Synthesis and characterization of new organic compounds and reaction mechanisms, through the use of electrochemical technology.

RESEARCH LINES

- Cathodic and anodic electrogeneration of intermediates: Carbenes in the synthesis of cyclopropanes, radicals and C-C coupling reactions
- Carbanions: Electrogenerated Bases (EGB) and their use in Heterocycles synthesis
- Paired Electrosynthesis: CO₂ recycling. Terpenes anodic Oxidation to perfume industry derivatives

OFFERED SERVICES

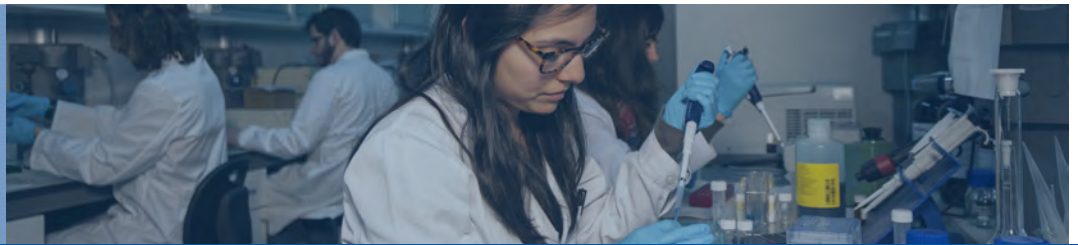
- Gram-scale electrosynthesis of organic compounds
- Spectroscopical characterization of organic molecules with application in pharmacy or in batteries
- Electrochemical characterization of Organic electroactive compounds

MARKETABLE RESULTS





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DIABETES, OBESITY & HUMAN REPRODUCTION

Code
713

DORH

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATOR

Héctor Fco. Escobar
Morreale

KEY WORDS

Androgen excess,
Diabetes, Hypogonadism,
Obesity, Omics, Polycystic
ovary syndrome

AIM

- Scientific community

CONTACT



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ABOUT US

The Diabetes, Obesity & Human Reproduction research group aims to excellence in translational research in the area of gonadal dysfunction in women and men, focusing on the complex sexual dimorphism characterizing the metabolic associations of androgen excess in women and androgen deficiency in men. The group is located at Hospital Universitario Ramón y Cajal, Madrid, Spain and, aside from the University of Alcalá, participates in collaborative research institutions such as Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS, www.irykis.org) and Centro de Investigación Biomédica en Red Diabetes y Enfermedades Metabólicas asociadas (CIBERDEM, www.ciberdem.org).

RESEARCH LINES

- Role of macronutrients in the postprandial hormonal, metabolic, inflammatory and oxidative stress responses in men and women
- Obesity-associated gonadal dysfunction in women and men
- Role of sex in chronic diseases of complex multifactorial aetiology (SECOMPLEX)
- Role of sex in metabolic disorders of complex multifactorial aetiology (SEXMETAB)
- Polycystic ovary syndrome and related metabolic disorders

OFFERED SERVICES

- Consulting in clinical research
- Consulting in design of clinical studies
- Consulting in meta-analysis and clinical guidelines
Proteomics, metabolomics, lipidomics, transcriptomics

MARKETABLE RESULTS





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CANCERS OF EPITHELIAL ORIGIN

Código
732

CELLO

APPLICATION AREA

Health Science
Experimental Science

RESPONSIBLE

Ana María Bajo Chueca

KEYWORDS

Biomarkers, Diagnosis,
Prognosis, Prostate cancer,
Breast cancer, Epithelial
cancers, Therapeutic
strategies

AIM

- Research training: Training of science students (Bachelor and Postgraduate) for their incorporation into the labour market
- Disclosure: Society

CONTACT



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ABOUT US

It is a priority in health to find ideal biomarkers in order to establish an adequate diagnosis and prognosis, and to guide the selection of the different therapeutic options throughout the course of the disease in cancers of epithelial origin.

RESEARCH LINES

- Study of biomarkers in the diagnosis and prognosis of cancers of epithelial origin
- Study of therapeutic strategies in cancers of epithelial origin

OFFERED SERVICES

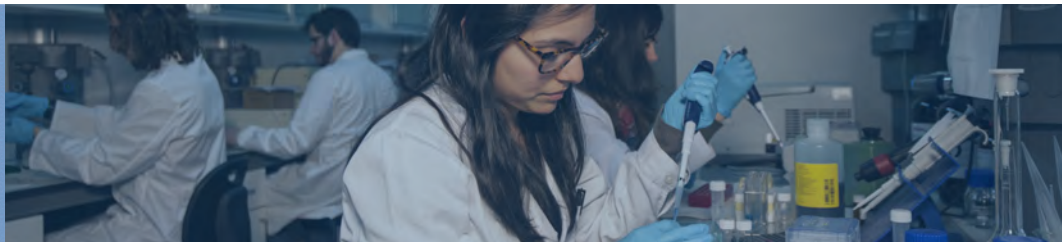
- Research: They are related to the techniques previously mentioned
- Training: Bachelor Thesis, Master thesis, Doctoral thesis, Professional practical work

MARKETABLE RESULTS





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BIOSENSING AND SUPRAMOLECULAR CHEMISTRY

Code
733

BIOENCHEM

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATOR

M. Paz San Andrés Lledó

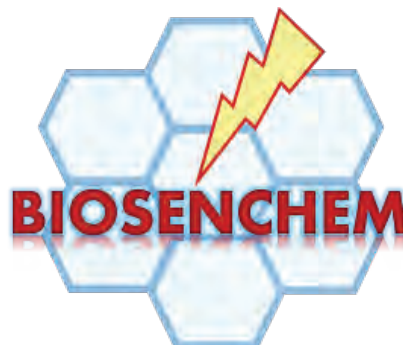
KEY WORDS

Nanomaterials, Graphene,
(Bio) surfactants, Bioactive
compounds, Molecular
fluorescence, Separation
methods

CONTACT



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ABOUT US

The group works in the Analytical Chemistry area of the Analytical Chemistry, Physical Chemistry and Chemical Engineering department.

RESEARCH LINES

- Carbon nanomaterial dispersion in organized media: nanomaterial-(bio) surfactant and nanomaterial-bioactive compound interactions.
- Nanomaterials and (bio) surfactants applications in separation methods.
- Chemical sensors: detection and quantification of (bio) analytes by molecular fluorescence techniques.

OFFERED SERVICES

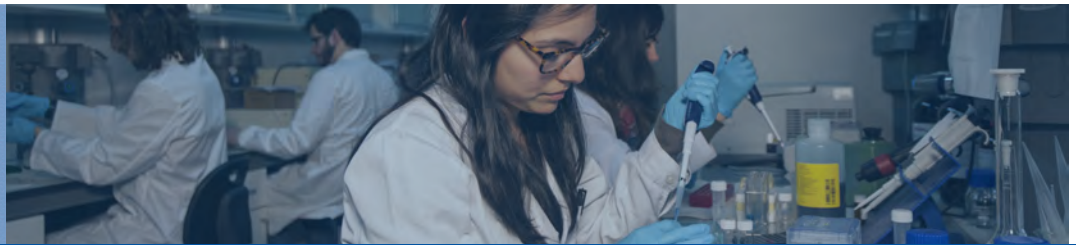
- Consulting and collaboration with companies.

MARKTABLE RESULTS





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DEVELOPMENT AND APPLICATION OF MOLECULAR MARKERS IN PLANTS

Code
748

MARMOL

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATOR

Yolanda Loarce Tejada
Juan M. González Triguero

KEYWORDS

Molecular markers,
Cereals, Root System
Architecture (RSA), FISH,
PCRq, Plant Genetic
Resources

AIM

- Agrifood Seed companies

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ABOUT US

The objective of the group is the development of DNA molecular markers for identify those that are useful in studies to evaluate genetic diversity, genome evolution and plant breeding. Genetic diversity studies try to quantify the intraspecific variability present between cultivated species varieties or between natural populations of wild species. The diversity found among species of the same genus is used as a phylogenetic tool. The common goal in these studies are to provide information that will contribute both to a better use of plant genetic resources in plant breeding as to define the most appropriate strategies for the conservation of these resources.

RESEARCH LINES

- Use of molecular markers in the study of plant genetic diversity
- Study of genomic evolution in the Avena genus using cytogenetic methodologies
- Development of molecular markers to identify pathogen resistance genes in oats
- Phenotyping and genetic control of the architecture of the plant root system (RSA)

OFFERED SERVICES

- Application of experimental methods of DNA markers (RFLPs, SSRs, ISSRs, SNPs, etc) in plants
- Application of softwares for the analysis of polymorphism in natural populations or commercial varieties of plants
- Phenotyping of root architecture
- Gene expression studies in plants

MARKETABLE RESULTS





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ADENOCARCINOMA & METASTASIS

Code
767

Adenometastasis

RESEARCH AREA

Experimental Sciences
Health Sciences

COORDINATOR

Benito Fraile Laiz

KEY WORDS

Adenocarcinoma,
Angiogenesis,
Allergology

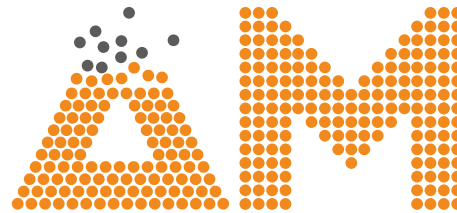
AIM

- Scientific investigation
- Diagnosis

CONTACT



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ADENOCARCINOMA & METASTASIS

ABOUT US

Research in the cell biology, diagnosis and prognosis of hormone-dependent glandular cancer.

RESEARCH LINES

- Allergology
- Angiogenesis in cancer
- Cytokines and adenocarcinoma
- Tumor stem cells
- Diagnostic and prognostic factors of adenocarcinoma
- Transduction pathways in cancer

OFFERED SERVICES

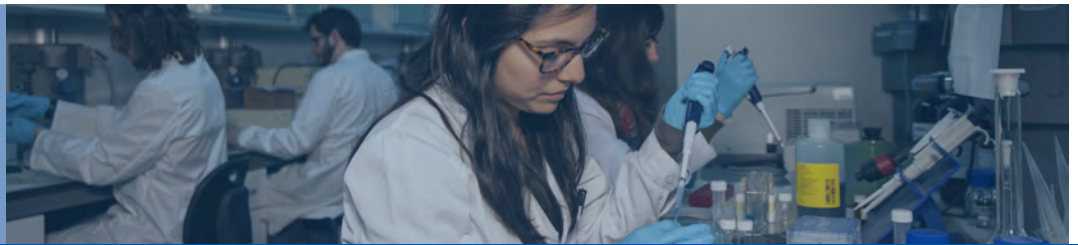
- Preparation of biological samples for observation under the light microscope
- Preparation of samples for transmission and scanning electron microscopy
- Image analysis in optical and electron microscopy
- In situ hybridization of nucleic acids
- Cell cultures

MARKETABLE RESULTS





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HUMAN DIVERSITY AND APPLIED ANTHROPOLOGY

Code
821

DIVERAP

RESEARCH AREA

Health Sciences
Experimental Sciences

COORDINATOR

Esperanza
Gutiérrez Redomero

KEY WORDS

Anthropology,
Anthropometry,
Dermatoglyphic, Forensic
Identification,
Body composition

AIM

- State security forces
- Health Areas

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ABOUT US

- Human biological variability studies
- Application of bioanthropological studies to forensic identification
- Application of bioanthropological studies to health
- Transfer of the knowledge achieved to the social groups of interest
- Collaboration with research groups and other institutions with similar objectives

RESEARCH LINES

- Forensic Anthropology: dermatoglyphic and physiognomic identification
- Dermatoglyphic characterization as tool in the early diagnosis of pathologies
- Body composition assessment
- Biological variation in morphophysiological traits applied to biometric identification
- Biological variation in human growth, development and maturation patterns

OFFERED SERVICES

- Advice on forensic identification through fingerprints
- Advice on physiognomic identification
- Assessment of growth, development and maturation in individuals, groups or populations
- Body composition studies in individuals, groups or populations

MARKETABLE RESULTS

