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Instituto de Tecnologia Química e Biológica (ITQB) is a scientific research and advanced training institute of the Universidade NOVA de Lisboa. The ITQB is located in the Town of Oeiras, at the Tagus river mouth, just outside Lisbon.

The mission of the ITQB is to carry out scientific research and postgraduate teaching in chemistry, life sciences, and associated technologies, while also serving the community and performing university extension activities for the promotion of science and technology.

Brief account of ITQB's history

The origins of ITQB go back to 1986 when the concept of a new research centre was developed and took shape through a process led by Professor António V. Xavier (1943-2006), culminating in the launch of CTQB (Centro de Tecnologia Química e Biológica) in 1989. This research centre became Instituto de Tecnologia Química e Biológica in 1993, when it was integrated in Universidade Nova de Lisboa.

Since its foundation, and to the present date, ITQB works closely with its partner institution IBET (Instituto de Biologia Experimental e Tecnológica) – a private, not-for-profit biotechnology institution, which works close to the industrial sector.

In 1996, ITQB started to operate in the present site, in the campus of Estação Agronómica Nacional, in Oeiras. The main building hosts most of the research groups and all administrative and support services; a few groups have remained in the previous location at Instituto Gulbenkian de Ciência or otherwise use laboratory space from the Instituto Nacional de Investigação Agrária e Veterinária (INIAV).

ITQB was one of the first research institutions to be awarded the status of Laboratório Associado (LA) by the Minister of Science and Technology, in 2001. Under the LA programme the Institute established a partnership with IGC and IBET, and later with CEDOC, to maximize its research and development potential.

In 2015, a new funding mechanism determined the organization of ITQB research activities within research units. In line with its research strategy, ITQB coordinates two research units (MOSTMICRO and GREEN-IT) and participates in a third one (INOVA4Health).

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Small Molecule X-Ray Crystallography
Isabel Bento
Library
Isabel Murta
Teaching Laboratory
Teresa Baptista da Silva
Technology transfer
Francisco Pereira do Valle
PEOPLE

- **187 PhD HOLDERS**
- **56 LABS**
  - **132 PhD STUDENTS**
  - **78 GRADUATES (BI)**
  - **44 MASTER STUDENTS**

- **105 POST DOCS**
  - **187 PhD HOLDERS**
  - **82 OTHERS**

- **35 FOREIGNERS**
  - **22 PhD HOLDERS**
  - **9 PhD STUDENTS**
  - **4 GRADUATES (BI)**
RESEARCH

TOTAL 242 PAPERS

10,751 CITATIONS

Q1 84

ONGOING RESEARCH PROJECTS

265 PhD STUDENTS

EDUCATION

64 NEW STUDENTS

203 NATIONAL STUDENTS

62 FOREIGN STUDENTS

265 PhD STUDENTS
EDUCATION

265 PHD STUDENTS

109 MALES

156 FEMALES

32 PhD degrees awarded

FUNDING

TOTAL 14,54M€

STATE BUDGET 21,5% 3,13M€

LABORATÓRIO ASSOCIADO 18% 2,52M€

RESEARCH PROJECTS 32% 4,65M€

PROGRAMA CIÊNCIA 9% 1,30M€

INDIVIDUAL GRANTS 15,2% (70 Post Docs | 99 PhD students) 2,22M€

OTHERS 4,26% 0,62€
ITQB has a strong expertise in Molecular Biosciences, covered by four broad scientific disciplines: Cellular and Molecular Biology, Molecular and Structural Biology, Biotechnology and Systems Biology, and Chemical Biology. These scientific disciplines drive ITQB research, contributing to strategic Societal Challenges focused on the well-being of human societies (Molecular Basis of Health and Disease) and on the environment (Biological Resources and Sustainable Development).

**Molecular basis of health and disease** is directed to the well-being of humans and animals. ITQB aims to understand the biological questions at the molecular and cellular scale exploiting complementary expertise within the Institute. Epidemiology, molecular basis of infection, and antimicrobials and resistance are areas where research is being pursued towards this goal. Our molecular expertise allows us to unveil the mechanisms of disease and drug action, while opening the way for the design of new drugs, including biopharmaceuticals and ATMPs. In summary, ITQB addresses, at several levels of depth (from the atomic level, to organism biology), the molecular mechanisms that sustain life.

**Biological resources and sustainable development** deals mainly with the environment at large. The expertise of ITQB in Plant Sciences has a strong molecular edge and obvious impact on agriculture and the environment, placing the Institute on a very competitive position to make a difference at national and international level. Additionally, ITQB contributes substantially to the topics of food safety and security, which are strategic in our over-crowded planet.

Furthermore, ITQB expertise in clean production of useful products through (bio)catalysis (including bioenergy production), and microbiotechnology, can pave the way to a more sustainable development, while maintaining and improving the quality of life of advanced societies.

Research activities are currently integrated in Research Units, which involve researchers from other institutions. ITQB coordinates two Research Units – MOSTMICRO and GREEN-IT - and is further involved in a third one – iNOVA4Health. MOSTMICRO and iNOVA4Health operate in the area of Health and GREEN-IT operates in the area of Sustainability.

The **Molecular, Structural and Cellular Microbiology Unit** (MOSTMICRO) aims to advance the fundamental knowledge of living organisms, with emphasis on important bacterial pathogens, towards improving human health.

Research is focused on selected microorganisms from all the three life domains, Bacteria, Archaea and Eukarya, for the study of basic biological questions, to improve our understanding of pathogens, and to contribute to the identification and design of novel systems/proteins/compounds with therapeutic potential.

The unit is coordinated by ITQB.

The mission of the **BioResources 4 Sustainability Unit** (GREEN-IT) is to develop or design more sustainable biological and synthetic systems with application in food, feed, energy and the environment through the study of biological resources, ranging from complex systems like plants, bacteria and fungi, down to the level of proteins and molecules.

GREEN-IT explores biological resources, using chemical and biological strategies, to address key societal challenges in agriculture, forestry and energy, ensuring environmental protection and supporting a bio-based economy.

The unit is coordinated by ITQB and also involves research groups from iBET and IGC.

**iNOVA4Health** is a translational medicine programme organizing the efforts of biomedical researchers involved in biological understanding of disease, lead compounds and biopharmaceuticals “pre-discovery”, technological scientists involved in “preclinical development”, and clinicians involved in “early clinical and first in man clinical trials” from institutions within NOVA University of Lisbon. The programme has a strong emphasis on developing therapies to promote healthy ageing and in targeting chronic diseases that are responsible for two thirds of deaths worldwide and a major burden on healthcare systems for the future.

The unit is managed by iBET and also includes ITQB, CEDOC and the IPOLFG, Portuguese Oncology Institute.
RESEARCH DIVISIONS

At ITQB, Research Laboratories are organized into five Research Divisions - Chemistry, Biology, Biological Chemistry, Plant Sciences, and Technology. Collaboration between Divisions is strongly encouraged. The diversity of expertise present at ITQB contributes to the multidisciplinary atmosphere that makes this Institute unique in the country.

CHEMISTRY DIVISION

Ana Petronilho Lab
Bioorganometallic Chemistry
Research in our group is centred in the synthesis of biologically relevant N-heterocyclic carbenes (NHCs), and on their applications as pharmaceuticals and catalysts.

Beatriz Royo Lab
Homogeneous Catalysis
The homogeneous catalysis group works on the synthesis of novel catalyst based on organometallic species. Our final goal is to develop sustainable, efficient and selective organic transformations.

Carlos Romão Lab
Organometallic Chemistry
The Laboratory of Organometallic Chemistry is presently studying new metal derivatives of carbon monoxide (CO) to be used for the production of renewable energy and as a new class of drugs based on the therapeutic activity of CO.

Chris Maycock Lab
Organic Synthesis
Natural product syntheses are a great challenge since the product gross structure and stereochemistry are rigorously defined. Any synthesis is a test of the viability of the strategy and of the compatibility of the reagents. The organic synthesis group is dedicated to the synthesis of compounds which have a relatively complex three dimensional structure and which may not necessarily be related to the gross structure.

Eurico Melo Lab
Micro-heterogeneous Systems
This group focus on the study of how the small volumes, the limited dimensions and the topology of the compartments in which biological reactions take place influence their kinetics and equilibrium.

Isabel M. Marruco Lab
Separation and Extraction Technologies
The Separation and Extraction Technologies group uses engineering tools to develop sustainable chemicals, materials and processes. Research ranges from fundamental studies on phase equilibria to applications in separation and extraction processes.

Luis Paulo N. Rebele Lab
Molecular Thermodynamics
Molecular thermodynamics of liquids and liquid solutions, in particular, studies of ionic liquids and ionic liquid-containing systems constitute the main activity of this group. Other research topics include isotope effects, polymer solutions, and metastable liquids.

Rita Delgado Lab
Coordination and Supramolecular Chemistry
The Coordination and Supramolecular Chemistry group designs and synthesizes new molecules for the selective uptake of anions, neutral molecules or metal ions for environmental and medical applications.

Rita Ventura Lab
Bioorganic Chemistry
Bioorganic Chemistry is the interface of organic chemistry and biology. Research in this lab uses the principles and techniques of organic chemistry to solve problems of relevance to biology, like designing synthetic derivatives of natural products that improve on nature.
BIOLOGICAL CHEMISTRY DIVISION

Antonio M. Baptista Lab
Molecular Simulation
The Molecular Simulation Laboratory develops and applies theoretical/computational methods to study the atomic-level determinants of the behavior of (bio)molecules.

Carlos Frazão Lab
Structural Biology
Macromolecular Crystallography Unit
The Structural Biology Laboratory works on the 3D structural determination of biological macromolecules aiming to understand biological processes at atomic and molecular level.

Claudina R. Pousada Lab
Genomics and Stress Laboratory
The genomics and stress laboratory works in the mechanisms involved in homeostasis control when yeast cells are exposed to different environmental cues. The function of Yap transcription factors in stress response is investigated.

Claúdio M. Soares Lab
Protein Modeling
The Protein Modelling Laboratory works on molecular modelling of proteins using physical methods. Our areas of work range from basic research in modelling methodologies to applications with biotechnological and biomedical interest.

Colin McVey Lab
Structural Virology
Macromolecular Crystallography Unit
Our research is focused on gammaherpesvirus viral modulation and the study of proteins encoded by herpesvirus to understand their structural and functional role in viral latency. Viral latency is the ability of a pathogenic virus to lie dormant within a cell. One of the most essential tasks during latency is to maintain the viral episome through cycles of mitotic cell divisions. The focal point of our research is LANA, a multifunctional protein that is critical for the establishment and maintenance of viral latency. My lab combines both biophysical (EMSA, ITC & Thermostfluor) and structural methods (BioSAXS & X-ray crystallography) to understand protein interactions involved in viral latency and modulation of its host.

Inês A. Cardoso Pereira Lab
Bacterial Energy Metabolism
The Bacterial Energy Metabolism laboratory investigates the molecular basis of metabolic pathways for energy production, in microorganisms that are biotechnologically and environmentally important.

Ligia M. Saraiva Lab
Molecular Mechanisms of Pathogen Resistance
The Molecular Mechanisms of Pathogen Resistance Laboratory mainly focus on understanding the survival mechanisms of human pathogens that relate to oxidative and nitrosative stress imposed by the human immune system.

Ligia O. Martins Lab
Microbial & Enzyme Technology
The research activities are in the field of Molecular Biotechnology aiming at the eco-efficient use of natural resources, the set-up of new bioremediation processes, and the production of bio-based products.

Manolis Matzapetakis Lab
Biomolecular NMR
Our focus is the application of NMR to various biomolecular problems. We are interested in protein structure determination - dynamics, protein-protein interactions including the study of metalloproteins and large proteins.

Manuela M. Pereira Lab
Biological Energy Transduction
Metalloproteins and Bioenergetics Unit
The Biological Energy Transduction Group addresses a fundamental process for all living organisms: energy conservation. A wide range of biochemical and biophysical techniques is used to investigate the mechanisms of energy transduction by membrane respiratory chains.

Margarida Archer Lab
Membrane Protein Crystallography
Macromolecular Crystallography Unit
In the Membrane Protein Crystallography Laboratory, we determine the three-dimensional structure of biological macromolecules. The laboratory is integrated in the Macromolecular Crystallography Unit.

Maria Arménia Carrondo Lab
Structural Genomics
Macromolecular Crystallography Unit
The Structural Genomic Group develops structural studies by X-ray diffraction of proteins and protein interactions involved in the innate immune response and a number of different prokaryote proteins that are targets for health and biotechnological applications, using a structural genomic approach.
Miguel Teixeira Lab
Metalloenzymes and Molecular Bioenergetics
Metalloproteins and Bioenergetics Unit
The main research themes of the Laboratory are the study at the molecular level of the structure and functional mechanisms of soluble and membrane-bound metalloenzymes, namely those involved in oxygen and nitric oxide metabolisms.

Pedro Matias Lab
Industry and Medicine Applied Crystallography
Macromolecular Crystallography Unit
Many proteins in nature have either industrial and/or medicinal applications. Knowledge of their three-dimensional structure is essential to understanding their function at the atomic level, and can be used to control or improve their functional activity by the production of small molecules to act as substrates or ligands with specific purposes (e.g., drugs to fight disease) or by engineering selected mutants with enhanced biological activity. Our research program is dedicated to doing just that: determining the 3D structure of selected proteins, and using that knowledge, in combination with other studies (biochemical, spectroscopic, etc.) to understand how these molecules work.

Ricardo O. Louro Lab
Inorganic Biochemistry and NMR
The Inorganic Biochemistry and NMR Laboratory is devoted to the structural and functional characterization of redox proteins that participate in the anaerobic bioenergetic metabolism of microorganisms, using biophysical methods.

Smilja Todorovic Lab
Raman Spectroscopy of Metalloproteins
Research in the Laboratory for Raman spectroscopy of metalloproteins is focused on structural and functional characterization of redox proteins that perform diverse functions in cells, including electron transport, detoxification and enzymatic catalysis.
**BIOLOGY DIVISION**

**Adriano O. Henriques Lab**  
**Microbial Development**  
Bacterial spores are encased in a protein shield (or coat) that confers resistance against noxious chemicals and predation, protects the underlying cortex peptidoglycan layer from the action of lytic enzymes, and is a key sensor of the environment. The spore surface proteins are synthesized in the mother cell, one of the two compartments of the sporulating cell.

**Cecilia Arraiano Lab**  
**Control of Gene Expression**  
Our studies focus on the control of gene expression. We have studied RNA degradation and characterized enzymes that mediate decay. Other interests are stress and microbial growth. This work has many applications in Biotechnology and Health.

**Federico Herrera Lab**  
**Cell Structure and Dynamics**  
The overall aim of my laboratory is to lay the groundwork for the application of regenerative medicine in central nervous system (CNS) disorders involving neuronal loss, such as neurodegenerative disorders, spinal cord injury or stroke.

**Helena Santos Lab**  
**Cell Physiology and NMR**  
Research at the Cell Physiology & NMR Lab is focused on beneficial microbes, i.e., microorganisms that promote human health or well-being, or are sources of new metabolites and enzymes with potential application in biotechnology.

**Herminia de Lencastre Lab**  
**Molecular Genetics**  
Microbiology of Human Pathogens Unit  
The long-range interest of the laboratory is in the epidemiology, genetics, evolutionary and biochemical mechanisms of antibiotic resistant pathogens, specifically, staphylococci, Streptococcus pneumoniae, and enterococci.

**Júlia Costa Lab**  
**Glycobiology**  
Most mammalian proteins contain oligosaccharides covalently linked. We are studying the glycosylation of neuronal tissue.

**Maria Miragaia Lab**  
**Bacterial Evolution and Molecular Epidemiology**  
Microbiology of Human Pathogens Unit  
The Laboratory of Bacterial Evolution and Molecular Epidemiology aims to understand the molecular basis of bacterial evolution with focus on the evolution of antimicrobial resistance determinants and antimicrobial resistant clones in coagulase-negative staphylococci (CoNS).

**Mariana G. Pinho Lab**  
**Bacterial Cell Biology**  
In the Bacterial Cell Biology laboratory we use the Gram positive pathogen Staphylococcus aureus to study the mechanisms of cell division and of antibiotic resistance to cell wall targeting antibiotics.

**Pedro Domingos Lab**  
**Cell Signaling in Drosophila**  
The overall aim of my laboratory is to lay the groundwork for the application of regenerative medicine in central nervous system (CNS) disorders involving neuronal loss, such as neurodegenerative disorders, spinal cord injury or stroke.

**Raquel Sa-Leão Lab**  
**Molecular Microbiology of Human Pathogens**  
Microbiology of Human Pathogens Unit  
In our group we are studying how human interventions, such as the use of vaccines and antibiotics, impact on the nasopharyngeal ecosystem, a rich niche frequently inhabited by potentially pathogenic bacteria such as Streptococcus pneumoniae.

**Sergio R. Filipe Lab**  
**Bacterial Cell Surfaces and Pathogenesis**  
We study how bacteria synthesize a major component of their cell surface, the peptidoglycan, while simultaneously preventing the infected host from detecting this inflammatory macromolecule that can trigger an innate immune response.
PLANT SCIENCES DIVISION

Cândido Pinto Ricardo Lab
Plant Biochemistry
The Plant Biochemistry Laboratory applies transcriptomics, proteomics and metabolomics to study plant development and stress response. Cellular processes of model plants and molecular plasticity of plant genetic resources are areas of research.

Carla António Lab
Plant Metabolomics
At the Plant Metabolomics Lab we use Analytical Chemistry and Mass Spectrometry-based strategies to study Plant Development and Stress Biology. We aim to elucidate primary metabolite accumulation patterns in plants present in a defined developmental period and abiotic stress condition.

Célia Miguel Lab
Forest Biotech
Forest trees have a huge ecological and socio-economic impact. They provide the biomaterials for highly competitive forest industries. Efficient strategies for tree selection, improvement and clonal propagation are required in order to meet the increasing demand for forest products better suited for industry applications. However, the establishment of such strategies depends on a better knowledge of the biological processes underlying the traits of interest.

Manuela Chaves Lab
Plant Molecular Ecophysiology
Our general interests concern the understanding of physiological and molecular mechanisms underlying plant responses to environmental stresses as well as the differences among genotypes in the capacity to utilize external resources.

Isabel Abreu Lab
Proteome Regulation in Plants
At the Proteome Regulation Lab, we study the fast regulation of the cell proteome by post-translational occurring when plants are exposed to changes in their environment.

Nelson Saibo Lab
Plant Gene Regulation
In the Plant Gene Regulation Laboratory we use model and crop plants to study gene regulatory mechanisms underlying plant growth and plant responses to adverse environmental conditions.

Pedro Fevereiro Lab
Plant Cell Biotechnology
Our aim is to develop molecular strategies to support plant selection and breeding programs, to apply biotechnology to the development of company’s strategies and to train researchers in plant biotechnology and plant molecular biology.

Maria Carlota Vaz Patto Lab
Genetics and Genomics of Plant Complex Traits (PlantX)
At the PlantX Lab we unveil the genetic and genomic basis of plant Complex traits, such as nutritional or organoleptic quality or biotic/abiotic stress resistance, using different statistical genetic and genomic approaches.

Rita Abranches Lab
Plant Cell Biology
The Plant Cell Biology Laboratory works on several aspects of the biology of the plant cell, including the functional organization of the cell nucleus and protein processing within the plant secretory pathway.
RESEARCH

Catarina Brito Lab
Advanced Cell Models
Animal Cell Technology Unit
Our research is mostly translational and focused on the study of cellular microenvironment in disease onset and progression. To address these questions we develop and employ advanced cell-based disease models using stem cells and other patient-derived cell and exploring three-dimensional culture strategies, along with cell biological and biochemical approaches. Our main research targets are Central Nervous System diseases and Cancer.

Cristina Silva Pereira Lab
Applied and Environmental Mycology
The Applied and Environmental Mycology group aims to enlarge filamentous fungi biotechnological potential. Research ranges from fundamental studies on fungal biology to applications in bioremediation and biocatalysis, also highlighting ionic liquids higher interest.

Manuel J. T. Carrondo Lab
Engineering Cellular Applications
Animal Cell Technology Unit
Our research is centered on integrative development of bioprocesses for complex biopharmaceuticals namely vaccines, recombinant proteins and viral vectors for gene therapy.

Paula M. Alves Lab
Cell Bioprocesses
Animal Cell Technology Unit
Our research is centered on the development of bioprocesses for complex biopharmaceuticals namely vaccines, recombinant proteins and viral vectors for gene therapy. Current efforts include also the development of tools and methodologies for cell therapy applications and pre-clinical research (novel 3D in vitro models for toxicology namely the use of Stem Cells (hESC, iPSC and Adult Stem Cells) and primary cultures of human hepatocytes. Our main research areas are liver, cardiac and brain cell 3D in vitro models.

Andreas Bohn Lab
Systems Biodynamics
Animal Cell Technology Unit
Our research is primarily focused on studying the systems level metabolism of animal cells, combining computational and experimental tools to identify key regulatory mechanisms that control cell metabolic phenotypes (target biological systems include biopharmaceutical cell factories, stem cells used in expansion and differentiation protocols, as well as brain and cancer cell models). We also develop monitoring and control tools to support bioprocess optimization and batch-to-batch consistency.

Andreas Bohn Lab
Systems Biodynamics
Animal Cell Technology Unit
The Systems Biodynamics Laboratory uses computational and mathematical methods to analyze and predict the response of biological systems like plant leaves or microbial biofilms to dynamical variations of environmental conditions.

Teresa Crespo Lab
Microbiology of Man-made Environments
The main aim of the laboratory is the study of isolated microbial strains and of microbial populations and in natural environments and mostly in environments created by man like food products, polluted waters or microbial/host pairs.

TECHNOLOGY DIVISION

Abel Gonzalez Oliva Lab
Biomolecular Diagnostics
This multidisciplinary research team is committed to develop new biomolecular tools, such as nanoparticles (CdSe@ZnS quantum dots) and biosensors, for practical applications like disease diagnostic and bioprocess monitoring.

Ana Coelho Lab
Mass Spectrometry
The information obtained with the powerful Mass Spectrometry techniques is fundamental for the structural characterization of chemical and biochemical species.

Ana Luisa Simplicio Lab
Pharmacokinetics and Biopharmaceutical Analysis
The PABA group develops in vitro models to study pharmacokinetics and metabolism. Those models are applied to dietary supplements or prospective drugs.

Ana Sofia Coroadinha Lab
Cell Line Development and Molecular Biotechnology
Animal Cell Technology Unit
The primary research activity is centered in development and improvement of animal cell lines for the manufacturing of complex biopharmaceuticals, as recombinant proteins and recombinant virus for vaccines and gene therapy.

Ana Teixeira Lab
Bioengineering and Systems Biology
Animal Cell Technology Unit
Our research is primarily focused on studying the systems level metabolism of animal cells, combining computational and experimental tools to identify key regulatory mechanisms that control cell metabolic phenotypes (target biological systems include biopharmaceutical cell factories, stem cells used in expansion and differentiation protocols, as well as brain and cancer cell models). We also develop monitoring and control tools to support bioprocess optimization and batch-to-batch consistency.

Catarina Duarte Lab
Nutraceuticals and Delivery
This laboratory uses clean technologies for isolation and development of health promoting products. High pressure methodologies are applied for the extraction of bioactive compounds and preparation of new delivery systems.
SCIENTIFIC SERVICES

CERMAX
Centro de Ressonância Magnética António Xavier

CERMAX is one of the centers of the Rede Nacional de Ressonância Magnética and aims to facilitate the access and use of Nuclear Magnetic Resonance by the Portuguese scientific community, as well as to disseminate the possibilities of this technique. CERMAX accepts project proposals from scientists and researchers from other academic institutions or from the industry, in Portugal and abroad. CERMAX hosts the highest field spectrometer in Portugal (Bruker Avance II+ 800MHz equipped for experiments with solids as well as liquids), two 500 MHz spectrometers (one of which is also equipped for the acquisition of spectra of solids), and one 400 MHz spectrometer. These instruments support a wide range of applications, such as structure determination of proteins and small molecules, metabolic studies, science of materials, and in vivo NMR. CERMAX is located on the 1st floor of the ITQB main building.

UniMS (ITQB/iBET)

The goal of UniMS is to guarantee the continuing increase of Mass Spectrometry know-how and infrastructures at ITQB and iBET in order to provide the appropriate support of MS services to the scientific community and to the industry.

iBET/ITQB Mass Spectrometry Unit (UniMS) is equipped with five mass spectrometers: a time-of-flight MS/MS system (MALDI TOF-TOF 4800Plus, ABSciex), two ion traps coupled to HPLC systems (nano and conventional flows, Thermo Finnigan), one linear ion trap; and has recently acquired a top performing Triple-TOF mass spectrometer (ABSciex TripleTOF® 6600) combined with SWATH acquisition 2.0 and equipped with Ion Mobility Technology. UniMS is also one of the Nodes of the Portuguese National Mass Spectrometry Network (RNEM) – recently integrated in the National Roadmap of Research Infrastructures of Strategic Relevance (evaluated by FCT).

ASU (ITQB/iBET)

The Analytical Services Unit (ASU) has a track record of over twenty years targeting chemical, pharmaceutical, biopharmaceutical and agro-industrial markets, offering analytical development, validation and testing services for chemicals and biologicals. The Unit is GMP certified by INFARMED (the Portuguese medicines authority) and by DGAV (the Portuguese veterinary authority) for quality control and batch release of human and veterinary pharmaceuticals, biopharmaceuticals as well as experimental new drugs.

Bacterial Imaging Cluster

The Bacterial Imaging Cluster comprises light microscopy instrumentation optimized for imaging of fixed or live bacterial cells. The type of work possible includes, but is not restricted to, the following examples: i) cell shape analysis and how it varies using culturing conditions and upon genetic lesions; ii) the analysis of gene expression at the single cell and population levels, cell type-specific gene expression, or transcriptional cascades, through the localization and quantification of the signal from fluorescent reporters, autofluorescent proteins or through the direct localization of mRNAs; iii) studies of protein sub-cellular localization, co-localization, dynamics, and interactions during the cell cycle and differentiation processes, which have also been extended to the assembly of supra-molecular structures and bacterial organelles; iv) localization and dynamics of bacterial chromosome replication and segregation. The BIC has a laser micropoint system coupled to a high-end camera, which allows fluorescence resonance after photobleaching (FRAP) experiments to be implemented. Appropriate filter combinations allow the implementation of fluorescence resonance energy transfer (or FRET) applications. Image acquisition uses the Metamorph software suite. Off-site licenses are installed for image analysis and processing. Charges for external uses may be applied. BIC is located on the 5th floor of the ITQB main building.

RESEARCH FUNDING

Research at ITQB is mainly supported by contracted projects (awarded competitively) with national and international R&D funding agencies such as Fundação para a Ciência e Tecnologia or the European Commission.

ITQB has a Research Management office dedicated to finding funding opportunities, supporting the institution and researchers in applications for external funding, and strengthening ties with other stakeholders, namely helping to find a common language with non-academic partners. The Research Management provides pre-award support by identifying, advising and assisting in the preparation and submission of grant proposals, and post-award support through contract negotiation and project management.

ITQB secures most of its funding competitively through its three Research Units, MOSTMICRO, Green-it (both coordinated by ITQB) and iNOVA4Health (coordinated by iBET). In 2014, ITQB’s researchers secured 121 grants (amounting €4.7M) from national, in particular from the Fundação para a Ciência e Tecnologia, and international agencies (13 of which corresponding to EU awards, including 1 ERC and 2 Interreg SUDOE, and institutional partnerships with MIT and Harvard Medical School).
EDUCATION

PHD PROGRAMS

ITQB awards PhD degrees in Chemistry, Biochemistry, Biology and Engineering and Technological Sciences. ITQB PhD students are registered in one of the PhD Programs ongoing at the institute.

All ITQB PhD Programs are funded by Fundação para a Ciência e a Tecnologia and as such may provide PhD Fellowships; open calls are announced through all institutional channels. Students with other sources of funding may also apply.

The PhD Program in Molecular Biosciences is a flexible state-of-the-art research oriented program in life sciences. The Program trains students in molecular approaches needed to understand the mechanisms of life.

The International PhD Program Plants for Life aims to train a prominent body of future top researchers in plant sciences able to address key biological questions related to plant growth and development, plant responses to environmental stress, and improvement of crop varieties and plant products.

The PhD in Sustainable Chemistry is a multidisciplinary program in the central/broad area of chemistry, which will provide new focus on sustainable research strategies towards the development of new chemical, processes and products in line with current needs of the Chemical Industry and the demands of society.

The International Advanced Studies Diploma in Biotechnology – Cell Therapies and Regenerative Medicine is designed to promote the emergence of research leaders in academia, hospitals and industry, able to produce cutting-edge developments on Regenerative Medicine, translated into clinical applications, and to promote new business ventures, improving human health and economic growth.

The PhD Programme on Catalysis and Sustainability (CATSUS) aims to strengthen the advanced teaching and research in modern Catalysis, promoting a synergic cooperation of the different types of Catalysis, in Chemistry and Chemical Engineering, by gathering teams with complementary expertise in various institutions and favouring their interaction.

Participating institution
The PhD on Bioengineering Systems attracts the highest-performing students and involves exchanges with MIT faculty and their laboratories. Curriculum development as well as teaching activities involves the Portuguese institutions as well as MIT faculty.

The PhD in Advanced Integrated Microsystems provides advanced training in the design and implementation of miniaturized multifunctional devices and systems, fabricated using top-down and bottom-up micro and nanofabrication techniques, to be applied to bioprocessing, biotechnology, biomedicine, pharmaceutical sciences, biosensing for biomedical, environmental and food safety, and physical sensing.

The Doctoral Program in Applied and Environmental Microbiology is an inter-university and inter-research centre program offering multidisciplinary training that includes in-depth understanding of molecular and cellular microbiology and of the contemporary view of genome-based microbiology, microbial diversity and evolution.

Nuclear Magnetic Resonance Applied to Chemistry, Materials & Biosciences

Nuclear Magnetic Resonance Applied to Chemistry, Materials and Biosciences (coordinated by FCT-UNL)

The Graduate Program Science for Development is an innovative advanced training program, aiming to help prepare African and East Timorese students to pursue a scientific career and to train a new generation of University professors. The programme is funded by FCT and Fundação Calouste Gulbenkian.
NOVA DOCTORAL SCHOOL

ITQB PhD Students can access courses within the NOVA Doctoral School, a transdisciplinary structure within Universidade NOVA, which offers a range of complementary and transferable activities that support the personal and professional development of PhD students and supervisors.

MASTER COURSES

ITQB awards Master degrees and also hosts students registered at other academic institutions for their thesis research project.

Masters Degree in Medical Microbiology

The Masters Degree in Medical Microbiology, is a collaborative Masters Course from Universidade Nova de Lisboa initiated in 2003 and involving ITQB, the Instituto de Higiene e Medicina Tropical, Faculdade de Ciências Médicas and Faculdade de Ciências e Tecnologia. The course trains specialists in medical microbiology, providing a solid training both for professionals in laboratory and clinical settings, and for those wishing to pursue their studies in research (3rd cycle).

Master Projects

Research laboratories at ITQB welcome Master students registered at other academic institutions to develop their research projects. In this case, the credits are awarded by the institution awarding the Master degree. Available Research Projects are regularly announced on the ITQB’s webpage.

Masters Degree in Biochemistry for Health

The Masters Degree in Biochemistry for Health is a collaborative Masters from Universidade NOVA de Lisboa, involving ITQB, Faculdade de Ciências Médicas and Faculdade de Ciências e Tecnologia. The course provides a critical and analytical perspective of Human Health from a Biochemical point of view.

Biochemistry for Health

matters course

The Masters Course in Science Communication is a collaborative project of Faculdade de Ciências Sociais e Humanas and ITQB. With an essentially practical approach, the course covers the application of different communication tools to science communication in three major domains: journalism, institutional communication and education.

OTHER COURSES

ITQB offers several research training options each corresponding to a number of credits (ECTS) to be awarded as University Extension or Post-Graduation Courses. Summer students may apply to a short "Introduction to the Research Lab" course.

Selected students carry out their scientific training integrated in one of the research laboratories at ITQB (or within the Oeiras Associated Laboratory). Candidates from any nationality can apply at any time and should contact directly the PI of the lab they would like to join.

POST-GRADUATION COURSE

Scientific Research Training A
(Licenciados e/ou Mestres)
60 ECTS

University Extension Courses

Scientific Research Training B
(Licenciados ou Mestres)
40 ECTS

Scientific Research Training C
(Licenciados ou Mestres)
30 ECTS

Scientific Research Training D
(Licenciados, Mestres, Estudantes 1º ciclo)
15 ECTS

Research Integration
(Estudantes 1º ciclo)
16 ECTS

Scientific Research Training E
(Estudantes 1º ciclo/2º ciclo)
1.5 ECTS

Summer Training
Introduction to the Research Lab
(Estudantes de 1º ciclo)
6 ECTS
SOCIETY

OUTREACH ACTIVITIES

SCHOOL VISITS

Since its foundations, ITQB receives regular visits from high-schools throughout the year. In each visit, students (age 15 onwards) and their teachers meet two different research labs and have the opportunity to discuss with ITQB researchers both about the science and about research career prospects. Typically, ITQB welcomes between 150-200 students each year.

UM CIENTISTA VAI À ESCOLA

ITQB researchers are also available to visit the neighbouring schools and take some of their research outside the institute’s walls. These are excellent occasions for students of all ages to contact with active scientists in different fields.

DIA ABERTO

Organized every two years, the Dia Aberto (Open Day) is a Science fair like event for the general public. On a Saturday, ITQB opens its doors and organizes a set of activities to share some of the excitement of everyday research. This event includes exhibitions, hands-on activities, demonstrations, and visits and is different every time, usually integrated in an internationally celebration, like the International Year of Light in 2015.

SEMANA DA CIÊNCIA E TECNOLOGIA

Every year, in Portugal, November 24th celebrates the day for scientific culture. In that week, the whole country – ITQB included - organizes activities to disseminate science and technology. The Science and Technology week at ITQB takes different formats, including visits to the schools, SciArt workshops, or debates.

OTHER INITIATIVES

As an associate of Ciência Viva, ITQB is often invited to participate in science outreach activities of different formats; some at the Pavilhão do Conhecimento in Lisbon. Recent examples include the Biotechnology Festival, an international initiative which included

In collaboration with the Portuguese Society of Plant Physiology, ITQB has organized the Portuguese activities of the Fascination of Plants Day, an international initiative of the European Plant Sciences Organization scheduled for May 18th and organized every two years.

Some of ITQB local outreach activities are organized with the Oeiras city council.

CENTRO CIÊNCIA VIVA DE SINTRA

Since 2014, ITQB is the scientific partner of Centro Ciência Viva de Sintra, a science center located in the neighbouring region of Sintra, one of the most populated in Portugal. As the scientific partner, ITQB provides scientific consultancy, materials, and science protocols. In 2014, ITQB contributed to the exhibition “No inicíao era a semente”, that is now on tours in schools around the country.

ITQB AND THE OUTSIDE WORLD

ITQB strives to maintain an active communication with the outside world. This is achieved through media releases, when justified, and making use of web 2.0. Besides the traditional website, which is regularly updated, ITQB maintains active accounts on Facebook, YouTube and Instagram.

www.itqb.unl.pt
www.facebook.com/itqb.unl.pt
instagram.com/itqb.unl
www.youtube.com/user/ITQBchannel
ITQB IN 2014

A YEAR IN REVIEW

JANUARY

JAN 8
Official Opening of MolBioS PhD Program

JAN 13
Algeria Minister of Higher Education and Scientific Research Mohamed Mebarki visits ITQB

JAN 20
Mayor of Oeiras Paulo Vistas visits ITQB

FEBRUARY

FEB 4
ITQB joins “Coligação para o Crescimento Verde”

FEB 6
ITQB becomes the scientific partner of Centro Ciência Viva de Sintra

MARCH

MAR 4
Kick-off meeting of EU project LEGATO (Legumes for the Agriculture of Tomorrow)

MAR 6
Carlos Romão awarded Alberto Romão Dias Prize from the Portuguese Chemical Society

MAR 17
Alimentação, Saúde e Agro-Indústria, a Ciência ao serviço da Sociedade e da Economia organized by IBET

MAR 25
IBET celebrates 25 years

MAR 6,13,20,27
Open Labs initiative hosts visits from prospective students

MAR 31
Exploit the power of the European computer grid infrastructure for Structural Biology - Tutorial session

APRIL

APR 4
Cecília Arraiano becomes First Portuguese Fellow of the American Academy of Microbiology

APR 14-16
Vaccine Bioprocess Development Course (IBET/UCL) takes place

APR 23
Applications for the MolBioS PhD Program 2015 open

APR 26
Ana Filipe Rodrigues selected for Bolsa de Mérito da UNL 2013/14
May 7-9
ITQB Director integrates national delegation visit to S. Paulo, Brasil, for bilateral collaboration FCT/FASESP

May 12
Applications to the Master in Science Communication 2014/2015 open

May 20-22
ITQB Vice-Director integrates national delegation in visit to Israel

May 25
ITQB participates in Programa de Pós-Graduação Ciência para o Desenvolvimento in Cabo Verde

May 30
RNA Workshop 2014 organized at ITQB

June 2
Applications to the Master in Biochemistry for Health open

June 5
Algerian delegation visits ITQB

June 6
Matteo Bertero Prize awarded to ITQB PhD student Catarina V. Esteves

June 19
Five new FCT funded PhD Programmes include ITQB: Plants for Life and Biology at the Host-Microbe Interface (both with ITQB as coordinator); Advanced Integrated Microsystems (coordinated by IST), Nuclear Magnetic Resonance Applied to Chemistry, Materials and Biosciences (coordinated by FCT-UNL), and Applied and Environmental Microbiology (coordinated by Universidade do Minho).

June 25
Best Poster awarded to Francisca Monteiro in Vaccine Technology V Conference

June 27
ITQB Day marks 21st anniversary within Universidade NOVA
Best PhD Thesis 2013 attributed to Pedro Matos Pereira António Xavier prizes awarded to Gonçalo Miguel Gomes Graça (Universidade de Aveiro) and Inês Nunes de Sousa (Universidade de Lisboa)
Inauguration of the exhibits “Universus | Life is Art | Live versus Still Biopaintings” by Patricia Noronha

July 7
Biochemistry for Health Open Day

July 8
Meeting on protein electrostatics organized by ITQB member gathers 50 specialists in Lisbon

July 11
Over 400 participants join European Bioenergetics Conference 2014
Best Poster Award in Bioenergetics Conference

July 17
ITQB hosts First PCISBIO Day, a public meeting of the national centre for Structural Biology

July 24-27
7th CERMAX practical course on basic NMR
SEP 9
Nobel prize winner Ada Yonath at ITQB to celebrate international Year of Crystallography

SEP 11
PhD Student Marta Marques awarded poster of the day at FEBS/EMBO Conference in Paris

SEP 12-13
First MolBioS PhD Students retreat

SEP 20-27
Seventh edition of Biocrys CourseCe welcomes 35 participants

SEP 24
Applications to CATSUS PhD Program 2015 open

OCT 10
Second International Workshop on Pontin and Reptin

OCT 13
NOVA university featured in QS World University Rankings (Chemistry)

OCT 24
Inauguration of the exhibit “47oN 27oW Retratos de uma Expedição ao Oceano Atlântico” by Luis Gafeira

NOV 4
ITQB participates in “Noite do Professor” in Pavilhão do Conhecimento

NOV 5
Application to the PhD Plants for Life open

NOV 6-7
5th ITQB PhD Students’ Meeting

NOV 10
ITQB celebrates World Science Day for Peace and Development

NOV 21
Rugby trophy named after António Xavier, founder of ITQB

NOV 25
Third edition of Forest Genomics Meeting discusses gene regulation in forest trees

DEC 1
Conclusions of iBET/ITQB project “Azeite+Global” (funded by Sovena) publicly announced

The American Journal of Clinical Nutrition

DEC 5
Mini-Symposium “Two bacterial pathogens and a way to kill them” held at ITQB

DEC 11
Twelve FCT investigator positions awarded at ITQB

DEC 17
Christmas celebration at ITQB
MAIN SEMINARS

INVITED SPEAKERS

Beyond the structural function of dengue virus capsid protein: the role of its interaction with lipids in viral infection cycle
Andrea T. Da Poian, Instituto de Bioquímica Médica, Brazil

The amazing ability of continuous chromatography to adapt to a moving environment
Roger-Marc Nicoud, NOVASEP HOLDING S.A.S., France

Cellular morphogenesis during growth and development in the filamentous fungus Aspergillus nidulans
Steven Harris, University of Nebraska, Lincoln, USA

Quorum sensing control of phage-bacterial interactions
Sine Lo Svenningsen, Institute of Biology, Univ. of Copenhagen

Use of the Conditional cDNA Overexpression system to identify stress regulatory genes in Arabidopsis
László Szabados, Institute of Plant Biology, Biological Research Centre, Szeged, Hungary

The ILRI Vaccine Biosciences program and improved vaccines for the control of East Coast fever in cattle
Vish Nene, The International Livestock Research Institute (ILRI), Nairobi, Kenya

The regulatory network coordinating natural transformation in the human pathogen Vibrio cholerae
Brian Hammer, Georgia Institute of Technology, EUA

The Future of Plant Biotechnology
Pere Puigdomenech, CSIC, Barcelona, Spain

Bioinformática aplicada ao estudo de RNAs - não codificantes
Alexandre Rossi Paschoal, Univ. Tec. Federal do Paraná, Brasil

Transition metal complexes containing phosphate and imino-phosphorane ligands with potential as cancer chemotherapeutics
Maria Contel, Brooklyn College and The Graduate Center, Brooklyn, New York, US

Advances in the micropropagation of tropical woody species
Marguerite Quoirin, Univ. Federal do Paraná, Curitiba, Brazil

Linking the bioavailability of dietary polyphenols to mechanisms and physiological effects in humans
Paul A Kroon, Institute of Food Research, Norwich, UK

Identifying small RNAs: usual and unusual points
Rogerio Margis, Universidade Federal do Rio Grande do Sul

Building a cell wall from scratch: de novo morphogenesis in L-forms of Escherichia coli
Gabriel Billings, Stanford University, California, USA

Translational Oncology – the National Center for Tumor Diseases
Christof von Kalle, National Center for Tumor Diseases (NCT) Heidelberg, Germany

Vectors carrying heterologous RNA for designing new viral vaccines
Carlos Augusto Pereira, Instituto Butantan, Laboratorio de Imunologia Viral, São Paulo, Brazil

Live cell super-resolution analysis of Escherichia coli Topoiso-erase IV action
Pawel Zawadzki, Department of Biochemistry, Univ. of Oxford

Pneumococcal cell biology in a new light
Katrin Beilharz, Molecular Genetics Dept, Univ. of Groningen

Enhanced sampling hybrid Monte Carlo methods in GROMACS package: Multi-HMC-GROMACS
Elena Akhmatskaya, Basque Center for Applied Mathematics (BCAM), Spain

Biochemical Characterization of Microbial and Plant Cellulose Synthesis
Ming Tien, Penn State University

Artificial Photosynthesis with "Wired" Enzymes
Erwin Reisner, University of Cambridge, UK

Potassium uptake by guard cells control vacuolar dynamics and stomatal movements
José M. Pardo, Instituto de Recursos Naturales y Agrobiologia de Sevilla (IRNAS), CSIC, Spain

Exploring Membrane Protein Landscape: Experience from the New York Consortium on Membrane Protein Structure (NYCOMPS)
Filippo Mancia, Columbia University, New York, USA

Super-Resonators: uber super-resolution
Pedro Matos Pereira, MRC Lab. for Molecular Cell Biology UCL

FRONTIER LEADERS

Combatting Antibiotic’s Resistance?
Ada Yonath, Weizmann Institute, Israel

AVX SEMINARS

Between commensalism and pathogenicity: following evolution of Escherichia coli in real time
Isabel Gordo, Instituto Gulbenkian de Ciência

The calpain sword and neuronal death in the ischemic brain
Carlos Bandeira Duarte, FCT/Universidade de Coimbra

Mechanisms of Disease and Translational Medicine: what can we learn from Development
José António Belo, Universidade do Algarve

Virulence and Subversion: the Arsenal deployed by Listeria monocytogenes
Didier Cabanes, IBMC/Universidade do Porto
AVX SEMINARS (CONT)

Structural-based viral pathogenesis
Pedro Simas, FM/Universidade de Lisboa

Bioengineering platforms to modulate the activity of stem cells
Lino Ferreira, Biocant

Mónica Oleastro
Mónica Oleastro, Inst. Nac. de Saúde Doutor Ricardo Jorge (INSA), Lisbon, Portugal

Nuclear Tools For Molecular Imaging And Theranostics
Isabel Santos, C de Ciências e Tecnologias Nucleares, IST & FCUL

How cells coordinate growth and shape: unravelling the complexity of ion signalling in pollen tubes
José Feijó, University of Maryland, College Park & IGC

Site-selective chemical protein modification for basic biology and drug development
Gonçalo Bernardes, IMM, Faculdade de Medicina, Universidade de Lisboa & University of Cambridge

RESEARCH HIGHLIGHTS

Bacterial 3’UTRs are important for mRNA stability
PLOS Genetics | DOI: 10.1371/journal.pgen.1004001

Against the crisis, invest in science
Researchers present strategy to stimulate innovation-based economy in Southern Europe
Environmental Microbiology (2014)16 (1): 9-18

Spontaneously formed nano-sized emulsions
Researchers show yet another property of ionic liquids

The silver bullet
Researchers develop efficient membrane for gas separation

Inspired by nature
Researchers use plant suberin to develop new material
Biomacromolecules, Just Accepted Manuscript DOI: 10.1021/bm500201s

A CRISPR revolution: How bacteria fight their own infections
Researchers uncover new system of bacterial adaptive immunity
Plos Genetics DOI: 10.1371/journal.pgen.1004065

How shaved bacteria escape their host
Researchers identify Staphylococcus aureus strategy to avoid recognition by the host
eLife 2014;3:e02277

Eucalyptus genome sequenced
International consortium involves researchers from IBET/ITQB
Nature (2014) doi:10.1038/nature13308

The genome of Desulfovibrio gigas
Complete sequence of model sulfate reducing bacterium now available
Microbiology Open DOI: 10.1002/mbo3.184

How fungi degrade cell walls
Researchers uncover pathway of suberin utilization as carbon source

A new keyplayer in acute lymphoid leukemia
Research opens door to potential novel treatment
Oncogene. 2014 Aug 18.0. doi: 10.1038/onc.2014.248

Enzymes for a greener chemistry
Laccase is efficient alternative for synthesis of heterocyclic compounds
Green Chem., 2014, 16, 4127-4136

The largest of them all
Genomes of rust fungi are on average larger than those of other fungi

How bacteria hack each other’s mailing system
Researchers characterize bacterial mechanism for manipulating autoinducer-2

How will enzymes behave in ionic liquids?
A strategy for selecting ionic liquids for enzyme biotechnology

Filamentous fungi biopaintings
Patricia Noronha’s art work published in Leonardo
Leonardo (2014) doi:10.1162/LEON_a_00962

How oxygen gets there
Cytochrome c oxidase has alternative paths for oxygen diffusion to the active center


**PHD THESES**

**ALVES, Alexandra S.**  
Functional characterization and directed engineering of redox proteins for a rational improvement of Bioelectrochemical systems/Alexandra S. Alves ; supervisor Ricardo Louro. - Dissertation presented to obtain the Ph.D degree in Biochemistry

**BORGES, Alexandre Filipe Guerreiro**  
The grapevine defences/Alexandre Filipe Guerreiro Borges ; supervisor Ricardo Boavida Ferreira. - Oeiras : Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

**CHROSTEK, Ewa Anna**  

**DAMINELI, Daniel Santa Cruz**  

**DIEKMANN, Yoan**  

**FERNANDES, Catarina G.**  

**FIGUEIREDO, Teresa de Almeida**  

**GONÇALVES, Lígia Antunes**  

**HARTMANN, Diego de Oliveira**  

**LEITÃO, Alexandre Castanho Barata**  

**MARQUES, Marta Franco Coimbra**  
Structural and functional studies of a high activity NiFeSe Hydrogenase/Marta Franco Coimbra Marques ; supervisor Inês Cardoso Pereira/Pedro Matias. - Oeiras : Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

**MATEUS DE OLIVEIRA, Marisa**  
Coordinating development: uncovering the mechanisms that coordinate organ growth and patterning with the development of the whole body/Marisa Mateus de Oliveira; supervisor Christen Mirth . - Oeiras : Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

**MATEUS, Rita Drumond**  

**MIGUEL, Andreia Lúcia Campos dos Santos Ferreira**  

**NOORT, Sander Paul Van**  

**NUNES, Cátia Maria de Jesus**  
Inhibition of SNF1-related protein kinase by trehalose 6-phosphate and other metabolites and the interrelation with plant growth/Cátia Maria de Jesus Nunes ; supervisor Pedro Fevereiro. - Oeiras : Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.
PEREIRA, Fátima C.

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Computational modeling of prefrontal cortex circuits/ Jacinto José Fonseca Pereira; supervisor José Leal; Xiao-Jing Wang. - Oeiras: Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

PIMPÃO, Rui Carlos Soares
Exploring the bioavailability of (poly)phenols from berries and their potential activities in humans/Rui Carlos Soares Pimpão; supervisor Ricardo Boavida Ferreira - Oeiras: Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

RAMÍREZ, Carlos Humberto Ortiz
An integrated approach to Physcomitrella patens transcriptomics reveals important clues of the evolutionary development of plant organs and sexual reproduction/Carlos Humberto Ortiz Ramírez; supervisor José Feijó - Oeiras: Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

RAMOS, Ana Raquel Martinho

SANTOS, Raquel Alexandra Martinho

SHIRAI, Leila Taruko
Morphological diversification through the evolution of developmental hierarchies/ Leila Teruko Shirai; supervisor Patricia Belo dade. - Oeiras: Universidade Nova de Lisboa. Instituto de Tecnologia Química e Biológica, 2014.

TAVARES, Ana Lopes

TEIXEIRA, Neuza dos Prazeres Lima

TOMÉ, Liliana Sofia Carvalho

VALENTE, Rita S.


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Book Chapters


ONGOING PROJECTS

1. Small immunoactive peptidoglycan (siPGN) derivates to modulate an host inflammatory response.; PTDC/SAU-MIC/11447/2009; Sérgio Filipe

2. Response to oxidative and nitrosative stress by Entamoeba histolytica: searching for new virulence factors.; PTDC/SAU-MIC/111806/2009; Miguel Teixeira

3. Pathogenesis of Kaposi’s sarcoma herpesvirus LANA; HM-SP-ICP/0021/2010; Mª Armenia Carrondo

4. Sampling and biomarker optimization and harmonization in ALS and other motor neuron diseases.; JPND/0003/2011; Júlia Costa

5. The effect of divalent cations on G-Quadruplex formation and stability in genes related to neurodegenerative processes; PTDC/QUI-QUI/117105/2010; Patrick Groves

6. Ionic Liquids under tension; PTDC/QUI-QUI/117340/2010; Jose Esperanca

7. Redox necklaces: functional characterization of a multidomain polyheme cytochrome; PTDC/QUI-BIQ/117440/2010; Catarina Paquete

8. Tracking the evolution of methicillin resistance in staphylococci: stages in the evolution of the mecA determinant and the SCCmec structure; PTDC/BIA-EVF/117507/2010; Maria Miragaia

9. Molecular mechanisms that orchestrate a two-electron reduction step coupled with protonation in redox enzymes that contain chains of single electron redox co-factors; PTDC/BIA-PRO/117523/2010; Catarina Paquete

10. NEW PROTECTION: Native, Wild PRObiotic sTrain EffecCT In Olives in briNe; PTDC/AGR-ALI/117658/2010; Francisco Malcata

11. Mechanisms of SOD1 toxic aggregation in neurodegenerative processes; PTDC/QUI-BIQ/117789/2010; Claudio Gomes

12. Recovery of misfolded and aggregated proteins using biological nanoreactors and small molecules; PTDC/EBB-Bio/11793/2010; Claudio Gomes

13. An integrated approach to identify stress-related regulatory genes in cork oak (SuberStress); PTDC/AGR-GPL/118505/2010; Margarida Oliveira


15. Development of New Oxygen Therapeutics using Fluorinated Ionic Liquids; PTDC/EQU-FTT/118800/2010; Ana Belen

16. A molecular insight into the respiratory alternative complex III; PTDC/BIA/PRO/120849/2010; Manuela Pereira

17. Creating value from bio-wastes: suberin extraction and biotransformation in biocompatible ionic liquids aiming on novel biomaterials and compounds; PTDC/QUI-QUI/120982/2010; Cristina Silva Pereira

18. On the termophysical caraterization of new room temperature ionic liquids; PTDC/CTM-NAN/121274/2010; Jose Esperanca

19. Ionic Liquids as Promoters of Aqueous Biphasic Systems: The Role of van der Waals and Coulomb Interactions; PTDC/QUI-QUI/121520/2010; Isabel Marrucho

20. Lactation and milk production in Goat (Capra hircus): identifying molecular markers underlying adaptation to seasonal weight loss; PTDC/OVT/118439/2010; Manolis Matzapetakis

21. Protein interaction with CO Releasing Molecules (CORM); PTDC/QUI-QUI/117799/2010; Carlos Romão

22. VITIS-GRAFTING: Large-scale sequencing of small RNAs and transcript profiling for characterization of grafting incompatibility in Vitis species; PTDC/AGR-PRO/118081/2010; Pedro Fevereiro

23. Borrow some Boron: New Strategies for Protein Modification; PTDC/QUI-QUI/118315/2010; Ana Coelho

24. Prevalence and characterization of Staphylococcus aureus in portugues-speaking african countries and in East Timor; PTDC/SAU-SAP/118813/2010; Hermínia Lencastre/T. Conceição

25. Soil function profiling during fungal bioremediation: integrated bio-geochemical and meta-proteomics assessment; PTDC/AAC-CLI/119100/2010; Andreas Bohn

26. Characterization of ER-quality control for the FS08del-CFTR protein; potential therapeutic targets for cystic fibrosis; PTDC/SAU-GMG/122299/2010; Cláudio Gomes

27. Tailor-made expression hosts depleted in protease activity for recombinant protein production; ERA-IB/0001/2012; Rita Abranches

28. An Omics approach for diagnosis tuberculosis (Tbomics); New-Indigo/0001/2012; Ana Coelho

29. The intriguing function of cytoskeleton-associated proteins in Gram-positive bacteria; ANR/BEX-BCM/0150/2012; Mariana Pinto

30. NMR Net - National facility for Nuclear Magnetic Resonance: from molecular structure and dynamics to protein function, cell physiology and metabolics; RECI/BBB-BQB/0230/2012; Pedro Lamosa

31. Well defined iron catalysts for challenging tasks; PTDC/QEQ-QIN/0565/2012; Beatriz Royo

32. Energy conservation by a novel NADH dehydrogenase family widespread in bacteria; PTDC/BBB-BQB/0684/2012; Inês Cardoso Pereira

33. Structural Determinants of Oxygen Tolerance in a NiFeSe Hydrogenase; PTDC/BBB-BEP/0934/2012; Pedro Matias

34. Heme biosynthesis in Staphylococcus aureus: old bug new challenges; PTDC/BBB-BQB/0937/2012; Lígia Saraiva
35. Exploring rice biodiversity: a Genome-wide association (GWAS) study of salt-tolerance; EXPL/BIA-BIC/0947/2012; Sónia Negrão
36. Mechanisms of post transcriptional regulation of Xbp1: a potential modulator of the UPR and associated pathologies; PTDC/BEX-BCM/1217/2012; Fatima Cairrao
37. Development of microfluidic platform for single cell studies; PTDC/BBB-IMG/1225/2012; Abel Oliva
38. Reverting the carbon cycle: from CO to biodiesel; EXPL/BIA-MIC/1455/2012; Helena Santos
39. Increasing the realism of membrane modelling in constant-pH molecular dynamics methods: inclusion of electrochemical gradients and lipid titration; PTDC/QEQ-COM/1623/2012; António Baptista
40. Geen ionic liquids: new solutions for old engineering problems; PTDC/QEQ-FTT/1686/2012; Isabel Marrucho
41. Understanding echinoderms outstanding nervous system regeneration capabilities using a phosphoproteomics approach; PTDC/MAR-BIO/2174/2012; Catarina Ferraz Franco
42. Disentangle the Functional and Structural Modularity of the Peripheral Arm from Respiratory Complexes I; PTDC/BBB-BQB/2294/2012; Manuela Pereira
43. Epigenetic modulation of transgene expression in plant cell cultures for the improved production of recombinant proteins; PTDC/IMB/PLA/2411/2012; Rita Abranches
44. Structural investigation of the anti-tuberculosis drug target phosphatidylinositol phosphate synthase (PIPS); PTDC/BBB-BEP/2532/2012; David Turner
45. Development of multimodal imaging probes for intravascular molecular imaging of inflammation; PTDC/QEQ-MED/2656/2012; Olga Iranzo
46. Development of Dinuclear Cu(II) and Zn (II) complexes as potential inhibitors of oncogenic protein-protein interactions; PTDC/BBB-BEP/2532/2012; David Turner
47. Interaction between Legionella pneumophila and the host cell actin cytoskeleton; PTDC/IMB/PLA/282/2012; Irina Franco
48. Ionic liquid-based systems for protein crystallization; PTDC/BBB-BEP/3058/2012; Magdalena Kowacz
49. Isolation and identification of new ligninolytic bacterial enzymes; EXPL/BBB-BIO/1932/2013; Vania Brissos
50. Salmonella Persistence in eukaryotic cell: Examining the Role of RNASes and Small Functional RNas; PTDC/IMB/PLA/2442/2012; Cecília Arraiano
EXPLORATORY PROJECTS (IF POSITIONS)
1. IF/00376/2012/CP0165/CT0003; Carla António
2. IF/01023/2013/CP1173/CT0003; Colin Edward McVey
3. IF/00094/2013/CP1173/CT0005; Federico Herrera
4. IF/00268/2013/CP1173/CT0006; Monica Serrano

PROJECTS FUNDED BY PFIZER
1. Pneumo S-Influence of cigarette smoking in the dynamics of carriage of Streptococcus pneumoniae: a longitudinal study; WI183695; Raquel Sá Leão
2. PneumoY2: Evolution and adaptation of Streptococcus pneumoniae population in the era of expanded conjugates vaccines; WI182109; Raquel Sá Leão
3. CoPneumo - Co-colonization by pneumococci in the era of the thirteen-valent pneumococcal conjugate vaccine; WI191571; Raquel Sá Leão

PROJECTS FUNDED BY EUROPEAN COMMISSION
1. Standardization and orthogonolization of teh gene expression flow for robust engineering of NTN (new-to-nature) biological properties (ST-FLOW); FP7 (KBBE-2011-5) 289326; Cecília Arraiano
2. Transnational access and enhancement of integrated Biological Structure determination at synchrotron X-ray radiation facilities (BioStruct-X); FP7-INFRASTRUCTURES-2011- 283570; Mª Armenia Carrondo
3. 3 to 4: Converting C3 to C4 photosynthesis for sustainable agriculture (3 to 4); FP7-KBBE-2011-5 289582; Manuela Chaves
4. Combining innovation in vineyard management and genetic diversity for a sustainable European viticulture (INNOVINE); CP-TP - KBBE.2012.1.2-04 - 311775; Manuela Chaves
5. Innovative ionic polymers from natural sources for energy & environment (IONRUN); FP7-PEOPLE – 318873 - PIRSES-GA-2012-318873; Isabel Marruco
6. Legumes for the Agriculture of tomorrow (LEGATO); CP-TP - KBBE.2013.1.2-02 - 613551; Carlota Vaz Pato
7. Parliaments and Civil Society in Technology Assessment (PACITA); SIS-CT-2011-266649; Mara Almeida

PROJECT FUNDED BY EUROPEAN RESEARCH COUNCIL (ERC)
1. Finding new mechanisms for protein localization in Bacteria (ProteinLocalization); ERC-2012-StG- Grant Agreement 310987; Mariana Pinho

INDIVIDUAL FELLOWSHIPS BY EUROPEAN COMMISSION
1. Ion Transport at atomic level; PCIG11-GA-2012-322346; Afonso Duarte

PROJECT FUNDED BY SUDOE INTERREG IV B PROGRAMME
3. Biocluster Transnational de l’Espace Sud-Ouest Européen (TRANSBIO SUDOE); SOE4/PI/F788;