annual report 2010

INSTITUTO DE TECNOLOGIA QUÍMICA E BIOLÓGICA /UNL

Knowledge Creation

2010 Snapshots

PhD holders 190

62 research groups

227 articles (peer-reviewed)

PhD theses awarded 34

PhD students 160

156 running projects

6620 citations

% national publications in *Nature* and *Science* (as leading institution / last 5 years) 20

22 highly cited papers (top 1%)

INDEX

The *Instituto de Tecnologia Química e Biológica* (ITQB) is a research and advanced training institute of the *Universidade Nova de Lisboa*. Its mission is to develop high-quality research in chemistry and the life sciences, considering all levels of complexity and their potential applications, so as to contribute to the understanding of life's mechanisms. Its highly multidisciplinary nature makes ITQB a leading centre for advanced training of researchers in Portugal.

Currently, ITQB has 62 independent laboratories grouped in five research divisions. It hosts more than 400 researchers with different scientific interests and backgrounds. Researchers at ITQB benefit from outstanding facilities, equipment, and support services, some of which are unique in the country.

Since 2001, the important contribution of ITQB in research and development has been highly enriched by the partnership with the *Instituto Gulbenkian de Ciência* and the *Instituto de Biologia Experimental e Tecnológica*. This scientific cluster was one of the first to be awarded the title of *Laboratório Associado* by the Portuguese Government in recognition of its scientific excellence as determined by international evaluation panels. ITQB's commitment to high quality scientific research includes a programme for raising public awareness of science.

Further information on ITQB's activities available at www.itqb.unl.pt

Statistics

Research Groups

ITQB hosts 62 groups distributed into five research divisions. Each research group is headed by a PhD holder and may include other PhDs, Post-docs, PhD students, and graduates (BI). Excluding trainees, the average group size is 7 researchers.

Labs (and PhD holders) per division

Chemistry	9 (20)
Biological Chemistry	18 (38)
Biology	10 (43)
Plant Sciences	9 (48)
Technology	16 (36)

Group leaders by gender	33 female/29 male
Group leaders by nationality	53 portuguese/9 other

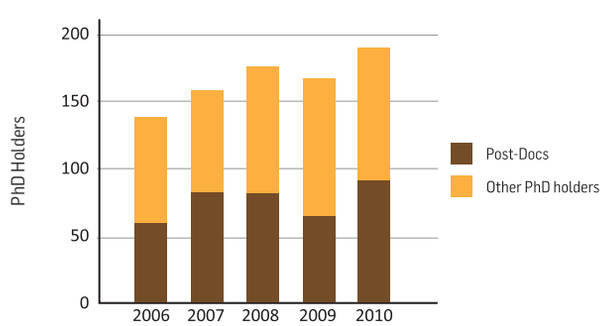
Researchers

ITQB operates as an open institute with the participation of researchers from other institutions; permanent research and teaching positions are limited. A number of researchers have been hired for 5-year periods either under *Laboratório Associado* contract or the *Ciência 2007* and *Ciência 2008* initiatives. The majority of the PhD holders are supported through post-doctoral scholarships.

PhD holders in 2010 190

Permanent Staff	26
Other institutions	27
Laboratório Associado	20
Ciência 2007	18
Ciência 2008	6
MIT-Portugal	2
Post Doctoral Fellows	91

PhD holders in the last five years

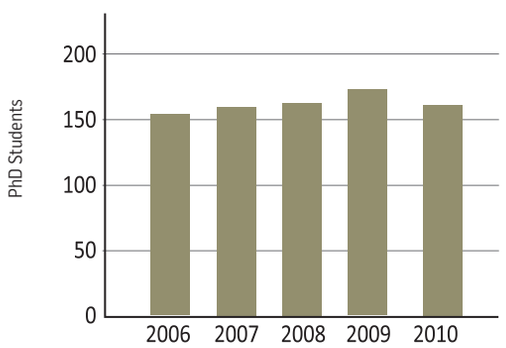


PhD holders by gender	120 female/70 male
PhD holders by nationality	148 portuguese/42 other

PhD students in 2010 160

Only PhD students working at ITQB are considered here (students working at other institutions can obtain their degree at ITQB but are considered in the Advanced Education Section). All these PhD students are integrated into research groups.

PhD students in the last five years



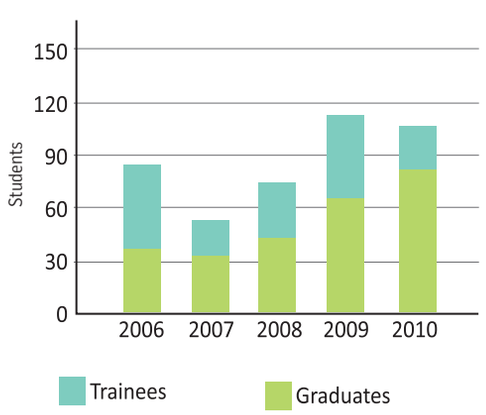
PhD students by gender	119 female/41 male
PhD students by nationality	146 portuguese/14 other

Graduates and undergraduates 107

Other graduates participate in research projects as grantees (*bolsas de investigação* - BI). Undergraduate students also have the opportunity to start their research training at ITQB.

Other graduates (BI)	82
Undergraduate trainees	25

Graduates and trainees in the last five years



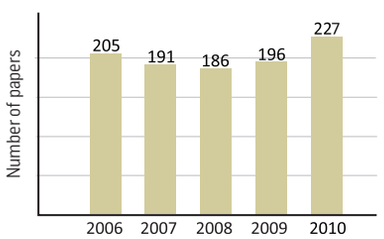
Research Articles

Research outcomes are regulary published in international peer-reviewed journals

Publications in peer-review journals in 2010 **227**
Books **2**
Book chapters **7**
(see full list in the Research Output Section)

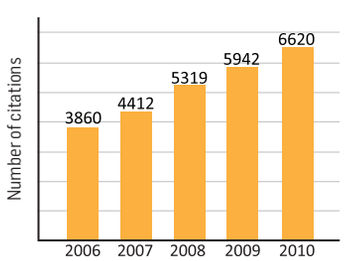
Average number of papers per group 3.7
Average number of papers per PhD holder 2.30 (excluding post-docs)

Publications in peer-review journals in the last five years



Total Citations in the last five years

total papers 2,435 (1990-2010)
total citations 46,600 (1990-2010)
h-index 77



Average citations per paper **23,7**
This average considers a paper's maturation time of three years (includes all ITQB papers until 2007 and the corresponding total citations to date)

Highly Cited Papers **22**
Number of papers included in the Highly Cited Papers list by Essential Science IndicatorsSM (Thompson Reuters): top 1% of articles by total citations in each annual cohort from each of the 22 disciplines (updated as of May 1, 2011 to cover a 10-year + 2-month period, January 1, 2001-February 28, 2011).

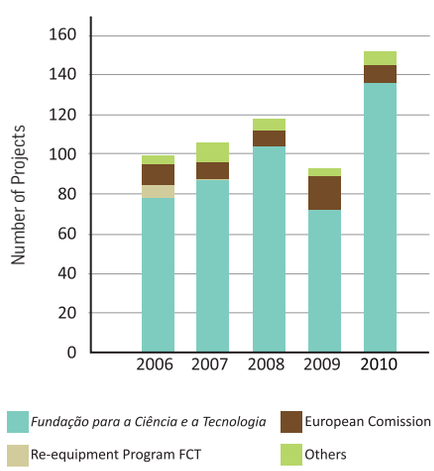
Research Projects

Research at ITQB is mainly supported by contracted projects with R&D funding agencies. The full list of projects currently running at ITQB is given in the Research Output Section.

Running projects (as of 31 Dec 2010) **156**

136 *Fundação para a Ciência e a Tecnologia* projects
7 European Commission projects
7 European Commission projects (individual grants)
2 Pfizer projects
1 *Fundação Calouste Gulbenkian* project
1 European Economic Area and Norway Grants project
1 M*inistério da Defesa* project
1 as subcontract partner project

Running projects in the last five years



Advanced Education

Total number of registered PhD students **263**
including 103 PhD students from IGC (as of 31 December 2010)

New PhD students in 2010 **53**

PhD Programme

The ITQB PhD Program in Chemical and Biological Sciences & Engineering corresponds to 240 ECTS divided in 30 ECTS of PhD Course and 210 ECTS for the research project.

While the core of the program is devoted to the research project, the program also includes a formal teaching component, the PhD course, which is particularly intensive at its start but extends throughout the 4 years of study. The course includes seminars, lectures, tutorials and round-table discussions.

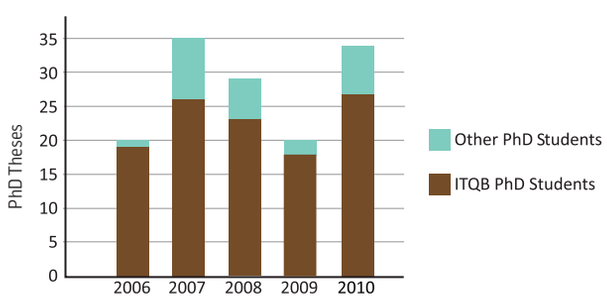
The ITQB PhD Course (30 ECTS) is divided into seven mandatory curricular units:

- Advances in Chemistry and Structural Biology (4 ECTS)
- Trends in Microbial and Cell Biology (4 ECTS)
- Frontiers in Biotechnology (3 ECTS)
- Research Training (9 ECTS)
- Free Option (4 ECTS)
- Bioentrepreneurship (3 ECTS)
- Science, Culture and Society (3 ECTS)

ITQB awards PhD degrees in Chemistry, Biology, Biochemistry and Technological and Engineering Sciences. Since 1995, ITQB has awarded 223 PhD degrees.

PhD theses awarded in 2010 **34**
(Biology: 17; Biochemistry: 12; Technological and Engineering Sciences: 5)

PhD theses in the last five years



Masters Degree Programme

ITQB is involved in the Masters Degree in Medical Microbiology, a collaborative Masters Course from the *Universidade Nova de Lisboa* with the *Instituto de Higiene e Medicina Tropical*, the *Faculdade de Ciências Médicas* and the *Faculdade de Ciências e Tecnologia*.

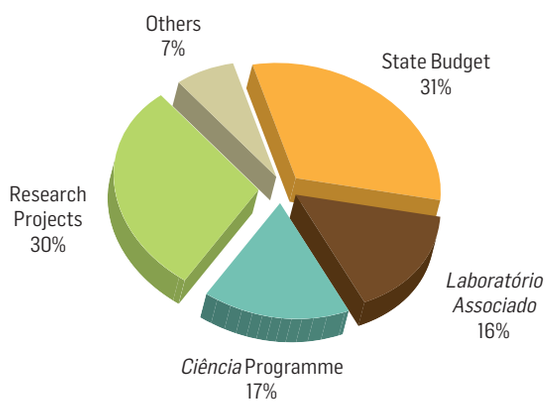
Research Training

ITQB offers several research training options each corresponding to a number of credits (ECTS) to be awarded as University Extension or Post-Graduate Courses. In 2010, 14 students concluded these courses at ITQB.

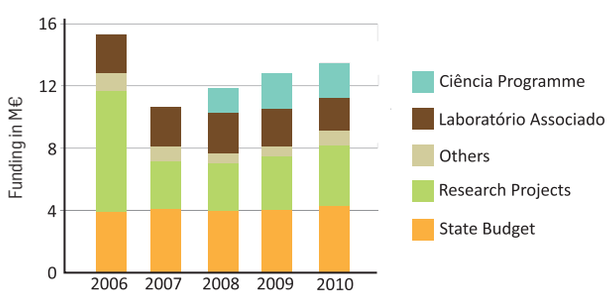
Budget

ITQB has two main funding sources, the state budget and the national science funding agency (*Fundação para a Ciência e a Tecnologia*).
FCT accounts for three sources of financial support, obtained through competitive funding processes: via the *Laboratório Associado* contract (LA), through research positions under the *Ciência 2007* and 2008 initiatives, and through project funding. Additional sources for research projects include the European Commission. In the chart, "others" refers to bench fees, isolated subsidies, revenues from Masters Degrees, the sale of analytical services, and the rental of rooms and facilities.

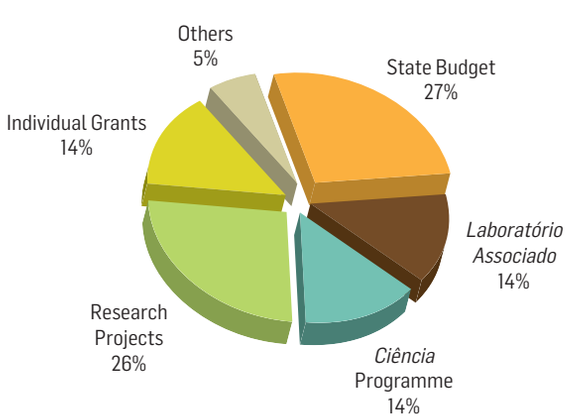
The overall budget of ITQB for 2010 was circa **13,5 M€.**



Funding sources in the last five years



Most ITQB PhD students and post-docs are financed directly through FCT fellowships. The chart below depicts ITQB's budget including this figure (2,3 M€).



Highlights

The 227 papers published in peer-reviewed journals during 2010 span different areas of chemistry and biology; these papers reflect the high-quality research at ITQB and contribute to the over 1,700 papers published in the last 10 years. In 2010, ITQB papers (total) received 6620 citations. The current h-index of ITQB is 77.

As a result of the 2009 FCT call for research projects, ITQB had 17 approved projects making it the leading institution (20% success rate) and 7 approved projects as participant institution. While the decision was known in 2010, these projects started only in 2011. Two ITQB researchers, Maria Miragaia and Jaime Mota, received ESCMID / FEMS Research Grants.

In 2010, ITQB researchers received many distinctions for their work at international scientific meetings. On a more individual note, Cecília M. Arraiano was elected Liaison in Portugal of the American Society of Microbiology and as Vice-President of the Portuguese Genetics Society; Claudina Rodrigues-Pousada received the Seeds of Science "Consagração" award by *Ciência Hoje*; Olga Iranzo received the Award "*Mérito Científico Santander/Totta - Universidade Nova de Lisboa 2010"* for the project "Peptidomimetics on Magnetic beads for Bioseparation processes", a joint project between ITQB and FCT-UNL; Rita Ventura was selected for the Cohitec Program.

Some research highlights in 2010 are listed below.

How green is "green"?
Researchers critically review ionic liquids' safety
Petkovic M. et al. (2011) Chemical Society Reviews, 40, 1383-1403

Are plants ready for nanotech?
Researchers assess how quantum dots affect Medicago cells
Santos A. et al. (2010) Journal of Nanobiotechnology, 8(1):24

Protein Folding and Metal Ions
New book on mechanisms, biology and disease co-edited by ITQB researcher
Eds C. M. Gomes and P. Wittung-Stafshede (2010) ISBN: 9781439809648

Not as simple as 1+1
Cell wall synthesis pathways turn out to be connected
Atilano ML et al. (2010) Proceedings of the National Academy of Sciences of the United States of America, 107(44):18991-18996

Green chemistry meets sports
Using ionic liquid aqueous systems for drug extraction
Freire M. G. et al. (2010) Green Chemistry 12, 1715-1718

Putting the pieces together
Researchers discover a new bacterial membrane complex
Venceslau S. S. et al. (2010) The Journal of Biological Chemistry, 285, 22774-22783

Research and training to fight tuberculosis
New FP7 project focus on bioinformatics and structural biology
Mycobacterium Tuberculosis: bioinformatic and structural strategies towards treatment

Bioenergy from metallic ores
Researchers' perspective on bacterial respiration
Paquete C. M. and Louro R. O. (2010) Dalton Transactions, 39, 4259-4266

Promoting berries in Europe
Recently approved FP7 project includes ITQB
EUBerry FP7 project

Problem solving with NMR
New NMR diffusion protocols developed at ITQB
Ribeiro J.P. et al. (2010) Analytical Biochemistry, 396, 117-123

Twisting to the left. Twice
Researchers determine structure of Z-Z DNA junctions
de Rosa M. et al. (2010), Proceedings of the National Academy of Sciences of the United States of America 07(20):9088-92.

Catching a pump in action
Molecular simulation insights into the mechanism of ABC transporter
Oliveira A. S. F. et al. (2010) The Journal of Physical Chemistry B, 114, 5486–5496

Preventing cell death
Anti-apoptotic effect of carbon monoxide in astrocytes
Queiroga C. S. F. et al. (2010) Journal of Biological Chemistry, 285(22): 17077-17088

Stress on accuracy
Enhanced method to detect reactive oxygen species
Rodrigues J. V. and Gomes C. M. (2010) Free Radical Biology and Medicine 49, 61-66

From mathematical models to bioprocess optimization
Tinkering the cell's energy metabolism for optimal virus production
Carinhas N. et al. (2010) Metabolic Engineering 12 , 39-52

Peer verdict: Highly accessed
Story of an article on improved bioprocesses for stem cell culture
Serra M. et al. (2009) BMC Biotechnology, 9:82

Green Chemistry corked up
Cover features suberin extraction by ionic liquids
Garcia H. et al. (2010) Green Chemistry, 12, 367-369

Moving towards the biological production of H2
Solving the structure of an oxygen-tolerant and highly active hydrogenase
Marques M. C. (2010) Journal of Molecular Biology 396, 893-907

Tracking the life story of an MRSA clone
High-throughput genomics for molecular epidemiology published in Science
Harris S. R. et al. (2010) Science 22, Vol. 327 no. 5964 pp. 469-474

Isotope effects: read about it
New Springer book has the collaboration of ITQB researcher
Wolfsberg M. et al. (2009) Isotope Effects in the Chemical, Geological, and Bio Sciences, ISBN 978-90-481-2264-6

There's more to cork than sealing wine
A green technology for dissolving cork biopolymers
Garcia H. et al. (2010) Green Chemistry 12, 367-369

Putting bacteria on the map
Resistant *Staphylococcus aureus* concentrate in hospitals
Grundmann H. et al. (2010) PLoS Medicine 7(1): e1000215

Trading off stability for activity
Biochemical characterization of a neurodegeneration protein
Correia A. R. et al. (2010) Biochemical Journal 426: 197–203

Prizes and Awards

Individual distinctions

Cecília M. Arraiano
Elected as Liaison in Portugal of the *American Society of Microbiology*.
Elected as Vice-President of the *Portuguese Genetics Society*.

Claudina Rodrigues-Pousada
Seeds of Science "*Consagração*"- Ciência Hoje, 2010.
Elected Chair of the FEBS Working Group on the Career of Young Scientists at the FEBS Council at Gothenburg.

Helena Santos
Elected President of the International Society for Extremophiles

Júlia Costa
Prize Best ITQB PhD Thesis 2010. Ricardo Gouveia (2009) "*The neuronal L1 cell adhesion molecule: production, characterization and biological role, ITQB"*.

Maria Miragaia
European Society of Clinical Microbiology and Infectious Diseases Research Grants"*In the search of the missing links in the evolution of staphylococcal chromosomal cassette* mec *(SCC*mec*)*".

Rita Ventura
Selection for the Cohitec Program, 2011.

Ricardo Gouveia
Best PhD Thesis at ITQB in 2009.

Research distinctions

Olga Iranzo
Award "*Mérito Científico Santander/Totta - Universidade Nova de Lisboa 2010*" for the project "*Peptidomimetics on Magnetic beads for Bioseparation processes*", Lisboa, Portugal. Cecília Roque (FCT-UNL) and Olga Iranzo (ITQB-UNL).

Vitor Paixão
Distinguished with the Prize António Xavier 2010 for the work reported in: Paixão V. B., Vis H. and Turner D. L. (2010). "*Redox linked conformational changes in cytochrome c3 from Desulfovibrio desulfuricans ATCC 27774.*" Biochemistry 49: 9620-9629.

In scientific meetings

Best poster Award
"*Design of Superoxide dismutase mimics*"
Ana Fragoso, Patrick Groves and Olga Iranzo.
Young Scientists Days - Chemistry-Biology-Physics interface meeting, 27-28th May 2010, European Institute of Chemistry and Biochemistry, Bordeaux, France.

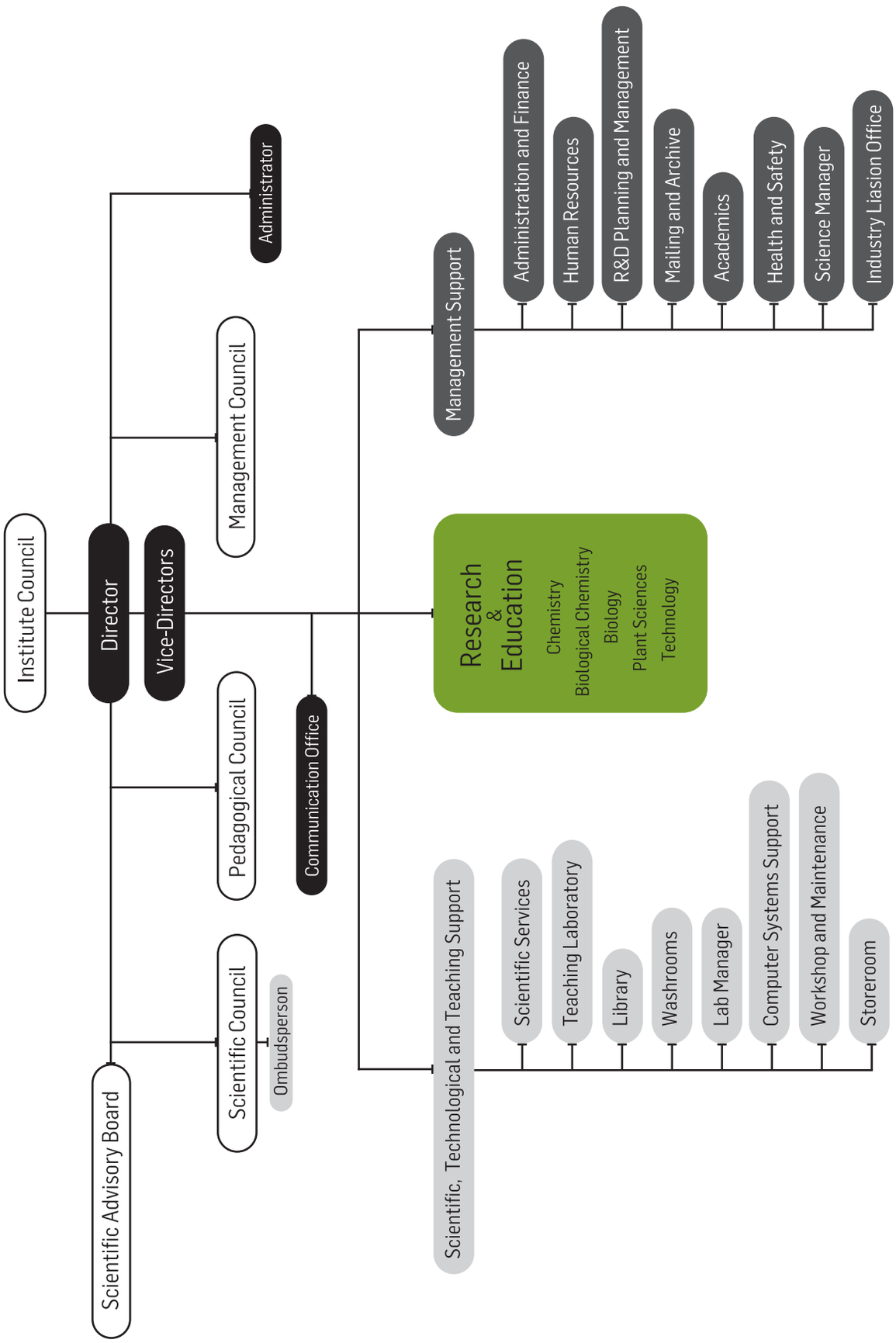
Best poster within the bacterial tetrapyrroles field:
"*Desulfovibrio vulgaris Hildenborough tetrapyrrole biosynthetic pathway enzymes: biochemical and structural characterization*".
Susana Lobo e Lígia Saraiva
Chemistry & Biology of Tetrapyrroles Gordon Conference, Salve Regina University, Newport, USA.

Best (oral and poster) communication prize:
"*An enzyme involved in thermostability*"
Przemyslaw Nogly, Nuno Borges, Miguel Pessanha, Helena Santos, Margarida Archer.
2nd Annual meeting of the Marie Curie network "*Structural Biology of Membrane Proteins*", Basel, Switzerland.

Best Poster Award:
"*Where do Ascochyta isolates infecting Lathyrus species stand on a grain legume-associated Ascochyta phylogenetic study?*"
N.F. Almeida, N. Rispail; M.C. Vaz Patto, D. Rubiales.
5th International Food Legume Research Conference (IFLRC) & 7th European Conference on Grain Legumes (AEP), Antalya, Turkey.

Best oral communication:
"*Exploring the proteome of an echinoderm nervous system: 2-DE of the sea star radial nerve cord and the synaptosomal membranes subproteome*"
Catarina Franco, Romana Santos, Ana Coelho.
7th European Conference on Echinoderms: Echinoderm Research 2010, Göttingen, Germany.

Organization of the Institute



Institute Council

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Galp Energia

Júlio Domingos Pedrosa da Luz de Jesus
Universidade de Aveiro

Peter Villax
Hovione

Carlos José Rodrigues Crispim Romão
Instituto de Tecnologia Química e Biológica

Maria Helena Dias dos Santos
Instituto de Tecnologia Química e Biológica

Adriano José Alves de Oliveira Henriques
Instituto de Tecnologia Química e Biológica

Cláudio Manuel Simões Loureiro Nunes Soares
Instituto de Tecnologia Química e Biológica

Júlia Carvalho Costa
Instituto de Tecnologia Química e Biológica

Maria Margarida Moutinho Girão de Oliveira
Instituto de Tecnologia Química e Biológica

Sérgio Joaquim Raposo Filipe
Instituto de Tecnologia Química e Biológica

João Miguel Marques Martins Damas (student)
Instituto de Tecnologia Química e Biológica

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Fátima Madeira

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Vice-Director
Luís Paulo N. Rebelo, Professor

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Rosina Faruk Gadit

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Universitat de Lleida, Spain

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Maria Arménia Carrondo (Inês Antunes Cardoso Pereira)

Biology
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Maria Helena Santos (Sérgio Raposo Filipe)

Plant Sciences
Cândido Pinto Ricardo - Division Coordinator
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Technology
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Manuel J. T. Carrondo (Cristina Silva Pereira)

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Cláudio M. Soares
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Catarina Isabel Silva (student)

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Ana Maria Portocarrero

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Luís Paulo N. Rebelo (Vice-Director)

Margarida Senna-Martinez (Administrator)

Fernando Jorge Tavares (Financial and property management)

Administrator
Margarida Senna-Martinez

Communication
Head: Ana M. Sanchez

Scientific, Technological and Teaching Support *

Scientific Services

Nuclear Magnetic Resonance CERMAX
Coordinator: Helena Santos
Manager: Pedro Miguel Lamosa

Analytical Services Unit
Coordinator: Teresa Crespo

Small Molecule X-Ray Crystallography
Isabel Bento

Fermentation Unit
Coordinator: Miguel Teixeira
João Carita

Teaching Laboratory
Coordinator: Adriano O. Henriques
Teresa Baptista da Silva

Library
Librarian: Susana Lopes
Library Advisory Committee
Chairman: Miguel Teixeira
Carlos C. Romão
Adriano O. Henriques
Margarida Oliveira

Washrooms
Coordinator: Teresa B. da Silva

Lab Manager
Cláudia Almeida

Computer Systems Support
Coordinator: Carlos Frazão
Executive coord.: Daniel F. Branco

Workshop and Maintenance
Head: Henrique Campas Nunes

Management Support *

Administration and Finance
Head: Fernando Jorge Tavares

Accounting
Ana Cristina Afonso Silva

Treasury Section
Ana Freire

Storeroom
João Rodrigues

Human Resources
Head: Maria Cristina Pinto

Mailing and Archive
Artur Freitas

R&D Planning and Management
Head: Maria de Lurdes Conceição

Science Manager
Alexandra Veiga

Academics
Ana Maria Portocarrero

Industry Liaison Office
Francisco Pereira do Valle

Health and Safety
Helena Matias, Chairman
José Artur Martinho Simões, Director
Cristina Lopes, Secretary

1st Floor / Maintenance - Henrique Campas Nunes, (Alexandre Maia)
2nd Floor - Fernando Jorge Tavares (Nuno Lopes)
3rd Floor - Inês Cardoso Pereira (Cláudio M. Gomes)
4th Floor - Abel Oliva (Júlia Costa)
5th Floor - Teresa Crespo (Victória San Romão)
6th Floor - Cândido Pinto Ricardo (Margarida Oliveira)
7th Floor - Rita Delgado (António Lopes)
ITQB I Building - Jaime Mota (Ana Rute Neves)
Chemistry Building - Christopher Maycock (Rita Ventura)
Radioactive Sources - Cecília M. Arraiano (Adriano O. Henriques)
Biological Hazards ITQB I - Rosario Mato Labajos
Biological Hazards ITQB II - Sérgio Filipe
Solvent Handling - Beatriz Royo
Occupational Medicine and Health - Helena Santos MD
Pilot Plant - António Cunha
Equipment and Washrooms - Teresa Baptista da Silva

* Please see full list of staff at www.itqb.unl.pt

Research *

Chemistry

Bioinorganic Chemistry and Peptide Design
Olga Iranzo, Investigador Auxiliar

Bioorganic Chemistry
Rita Ventura, Investigador Auxiliar

Colloids Polymers & Surfaces
António Lopes, Professor Associado U. Lusófona

Coordination and Supramolecular Chemistry
Rita Delgado, Professor Associado com Agregação IST

Homogeneous Catalysis
Beatriz Royo Cantabrana, Investigador Auxiliar

Micro-Heterogeneous Systems
Eurico de Melo, Professor Auxiliar IST

Organic Synthesis
Christopher Maycock, Professor Associado FCUL

Organometallic Chemistry
Carlos C. Romão, Professor Catedrático

Single Molecule Processes
Yann Astier, Investigador Auxiliar

Biological Chemistry

Bacterial Energy Metabolism
Inês Cardoso Pereira, Investigador Auxiliar

Metalloproteins and Bioenergetics Unit
Biological Energy Transduction
Manuela M. Pereira, Investigador Auxiliar

Biomolecular NMR
Manolis Matzapetakis, Investigador Auxiliar

Genomics and Stress
Claudina Rodrigues-Pousada, Prof. Catedrático Convidado

Macromolecular Crystallography Unit
Industry and Medicine Applied Crystallography
Pedro Manuel Marques Matias, Investigador Principal

Inorganic Biochemistry and NMR
Ricardo Saraiva L. Oliveira Louro, Investigador Auxiliar

Macromolecular Crystallography Unit
Membrane Protein Crystallography
Margarida Archer Frazão, Investigador Auxiliar

Metalloproteins and Bioenergetics Unit
Metalloenzymes and Molecular Bioenergetics
Miguel Teixeira, Professor Catedrático

Microbial & Enzyme Technology
Lígia O. Martins, Professor Auxiliar Convidado

Molecular Genetics of Microbial Resistance
Lígia M. Saraiva, Investigador Principal

Molecular Interactions and NMR
Patrick Groves, Investigador Auxiliar

Molecular Simulation
António Baptista, Investigador Auxiliar

Mössbauer Spectroscopy
Filipe Tiago de Oliveira, Professor Auxiliar FCT-UNL

Protein Biochemistry Folding & Stability
Cláudio M. Gomes, Investigador Auxiliar

Protein Modelling
Cláudio M. Soares, Professor Associado

Raman Spectroscopy
Smilja Todorovic, Investigador Auxiliar

Macromolecular Crystallography Unit
Structural Biology
Carlos Maria Franco Frazão, Investigador Principal

Macromolecular Crystallography Unit
Structural Genomics
Maria Arménia Carrondo, Professor Catedrático

Biology

Bacterial Cell Biology
Mariana G. Pinho, Investigador Auxiliar

Bacterial Cell Surfaces and Pathogenesis
Sérgio R. Filipe, Investigador Auxiliar

Bacterial Signaling
Karina B. Xavier, Investigador Auxiliar

Cell Physiology and NMR
Helena Santos, Professor Catedrático

Cell Signaling in *Drosophila*
Pedro Domingos, Investigador Auxiliar

Control of Gene Expression
Cecília M. Arraiano, Investigador Coordenador

Glycobiology
Júlia Costa, Investigador Principal

Infection Biology
Luís Jaime Mota, Investigador Auxiliar

Lactic Acid Bacteria & In Vivo NMR
Ana Rute Ramos Neves, Investigador Auxiliar

Microbial Development
Adriano O. Henriques, Professor Associado

Molecular Genetics
Hermínia de Lencastre, Professor Catedrático

Plants Sciences

Disease and Stress Biology
Ricardo Boavida Ferreira, Professor Catedrático ISA-UTL

Forest Biotech
Célia Miguel, Investigador Auxiliar

Genomics of Plant Stress
Margarida Oliveira, Professor Associado com Agregação

Plant Biochemistry
Cândido Pinto Ricardo, Prof. Catedrático Jubilado ISA-UTL

Plant Cell Biology
Rita Abranches, Investigador Auxiliar

Plant Cell Biotechnology
Pedro Fevereiro, Professor Auxiliar FCUL com Agregação ITQB

Plant Cell Wall
Philip Jackson, Investigador Auxiliar

Plant Developmental Genetics
Jorge Almeida, Professor Associado ISA-UTL

Plant Molecular Ecophysiology
Manuela Chaves, Professor Catedrático Aposentado ISA-UTL

Technology

Analytical Chemistry
Luís Filipe Silva Castro Vilas Boas, Professor Associado IST
Maria do Rosário Beja F. G. Bronze, Professor Auxiliar FFUL

Antibiotic Stress and Virulence of Enterococci
Fátima Lopes, Investigador Auxiliar

Applied and Environmental Mycology
Cristina Maria da Costa Silva Pereira, Investigador Auxiliar

Biomolecular Diagnostic
Abel Oliva, Investigador Auxiliar

Animal Cell Technology Unit
Cell Bioprocesses
Paula M. Alves, Investigador Principal

Animal Cell Technology Unit
Cell Line Development and Molecular Biology
Ana Sofia Coroadinha, Investigador Auxiliar

Animal Cell Technology Unit
Engineering Cellular Applications
Manuel J.T. Carrondo, Professor Catedrático FCT-UNL

Food Microbial Technology
Cidália Peres, Investigador Principal INRB

Mass Spectrometry
Ana V. Coelho, Professor Auxiliar Convidado

Microbiology of Man-Made Environments
Teresa Crespo, Investigador Principal IBET

Molecular Thermodynamics
Luís Paulo N. Rebelo, Professor Catedrático

Nutraceuticals and Delivery
Catarina Duarte, Investigador Auxiliar

Pharmacokinetics and Biopharmaceutical Analysis
Ana L. Simplício, Investigador Auxiliar

Physiology of Environmental Conditioned Microbiota
Vitória San Romão, Investigador Coordenador INRB

Systems Biodynamics
Andreas Bohn, Investigador Auxiliar

*Please see full list of staff at www.itqb.unl.pt

Invited and Visiting Professors

Alessandro Giuffrè
Università di Roma "La Sapienza", IT
Fast Kinetics

Alexander A. Konstantinov
Moscow State University, RU
Bioenergetics

Alexander Tomasz
The Rockfeller University, USA
Microbiology

Daniel H. Murgida
Technische Universität Berlin, DE
Raman spectroscopy

David Edward Onions
Invitrogen Corporation, USA
Virology / Vectorology

David L. Turner
University of Southampton, UK
Biology

Hansjörg Hauser
Gesellschaft für Biotechnologische Forschung GmbH, Germany
Eukaryotic Molecular Biology

John G. Aunins
Merk Research Laboratories, West Point, USA
Bioprocess Engineering

Jonas Almeida
University of Texas, USA
Biomathematics

José Artur Martinho Simões
Universidade de Lisboa, PT
Chemistry

José Canongia Lopes
Instituto Superior Técnico, PT
Molecular Simulation

Maria Teresa N. Duarte
Instituto Superior Técnico, PT
Crystallography

Kenneth R. Seddon
The Queen´s University of Belfast, UK
Ionic Liquids

Peter Alfred Donner
Direvo Biotech, Köln, DE
Biotechnology

Peter F. Lindley
Birkbeck College London, UK
Structural Biology

Peter G. Hildebrandt
Technische Universität Berlin, DE
Raman Spectroscopy

Robert Archibald Samson
Kasetsart University of Bankok, TH
Plant Pathology

Education

PhD Program in Chemical and Biological Sciences and Engineering

Coordinator
Inês Cardoso Pereira

Advances in Chemistry and Structural Biology
Inês Cardoso Pereira
Beatriz Royo

Trends in Microbial and Cell Biology
Sérgio R. Filipe
Célia Miguel

Frontiers in Biotechnology
Júlia Costa

Research Training
Cláudio M. Soares
Luís Paulo N. Rebelo

Free Option
Adriano O. Henriques
Paula M. Alves

Bioentrepreneurship
Luís Lajes, FE-UNL

Science, Culture and Society
Lígia M. Saraiva
Ana Sanchez

Master's in Medical Microbiology

Scientific Committee
Hermínia de Lencastre - Coordinator
Adriano O. Henriques
Cecília M. Arraiano

Research Training Courses

Coordinators
Célia Miguel
Cláudio M. Gomes

Scientific Services

Nuclear Magnetic Resonance

ITQB hosts the largest Portuguese NMR facility - *Centro de Ressonância Magnética António Xavier*. CERMAX has several NMR spectrometers (300, 400, 500 and 800 MHz), including the highest field spectrometer in Portugal. This equipment is part of the National NMR Network Facility and serves the Portuguese scientific community.

Small Molecule X-ray Crystallography

This X-ray crystallography facility is an analytical service that operates in close collaboration with IST and ITN. X-ray diffraction by a single crystal is used to determine the three dimensional structure of small molecules.

Fermentation Unit

This unit is only available for in-house researchers and is devoted to small or large scale cell growth of a multitude of different organisms. The unit is in charge of keeping the relevant collection of bacterial strains.

Teaching Laboratory

The Teaching Laboratory is designed and equipped to support the teaching activities of the Institute in areas ranging from Biochemistry to Genetics.

Laboratory Manager

The ITQB Lab Manager is responsible for the purchase and maintenance of scientific equipment for the Institute. Besides establishing efficient and professional purchase procedures, the Lab Manager supervises the common scientific equipment and supports researchers who need to acquire laboratory instruments, leading to significant budget savings for the institute as a whole.

Analytical Services Unit

The Analytical Services Unit is a partnership between *Instituto de Biologia Experimental e Tecnológica* (IBET) and ITQB under the executive management of IBET. The Unit is certified by the INFARMED (Portuguese Pharmacy and Medicines Agency) and IPQ (Portuguese Institute for Quality) as compliant with Good Laboratory Practices Principles (GLP). The Analytical Services Unit is divided into three Laboratories with different expertise.

Analytical Laboratory

This laboratory has a long track record of providing services using chromatographic (HPLC and GC with several detectors) and electrophoretic methods for the pharmaceutical, agro and chemical industries and academia.

Microbiology Laboratory

Services include in vitro potency assays, protein quantification, molecular biology analysis (GMOs in food and feed and other) and detection and quantification of impurities or contaminants in pharmaceuticals.

Mass Spectrometry Laboratory

This facility develops and validates analytical methods and performs routine analyses for a broad range of chemical compounds, from small organic and inorganic compounds to peptides, oligosaccharides, nucleotides, and proteins. The laboratory is associated with the Mass Spectrometry National Network Facility.

Institutional Relationships
Established Protocols

ITQB/IBET

ITQB's association with the *Instituto de Biologia Experimental e Tecnológica* (IBET), located in the same building, provides the interface between fundamental research and economic activities.

Laboratório Associado de Oeiras

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

Rede Nacional de Ressonância Magnética Nuclear

ITQB participates in the Portuguese NMR network created with the support of the *Fundação para a Ciência e a Tecnologia* (FCT) within the framework of a national programme for the acquisition and upgrading of scientific equipment. The network aims to stimulate the use of advanced facilities by Portuguese researchers and the sharing of the national scientific resources.

Rede Nacional de Espectrometria de Massa

Mass spectrometry is one of the main instrumental supports in scientific research, namely in life, chemical and environmental sciences. ITQB is one of the nine Portuguese academic institutions that make up the RNEM (*Rede Nacional de Espectrometria de Massa*), an infrastructural network launched in 2007 under the general National Program for Scientific Re-equipment.

MIT- Portugal
Massachusetts Institute of Technology

The MIT - Portugal partnership is an international collaboration between the Portuguese state and MIT, focusing on engineering systems. This collaboration is centred on research, technology and higher education, and aims at promoting scientific and technological development. The *Laboratório Associado* ITQB/IGC/IBET is directly involved in the Focus Area of Bioengineering Systems.

ITQB-Unicat
Unifying Concepts in Catalysis, German Cluster of Excellence

UniCat is a Cluster of Excellence in the area of catalysis research, under the supervision of the German Research Foundation. The Cluster is a Consortium of the three Berlin Universities, two Max-Planck Institutes and the University of Postdam, coordinated by the Technische Universität Berlin. Its external partners include large companies, and foreign academic partners.

Harvard Medical School-Portugal

The Harvard Medical School-Portugal program is a long-term collaboration to significantly expand translational research and health information. This initiative involves the Harvard Medical School, the Portuguese government, and Portugal's medical schools and biomedical research centers. The *Laboratório Associado de Oeiras* is one of the participating associate laboratories.

Interbio

Interbio is a consortium of research institutions from Southeast Europe, funded for 2.5 years with 1.9 million euros under SUDOE Programme. The consortium's main objective is to develop interdisciplinary research in the interface between chemistry and the life/health sciences.

Research Output
Publications 2010

Articles indexed in ISI

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2. Aguiar S. I., Pinto F. R., Nunes S., Serrano I., Melo-Cristino J., Sá-Leão R., Ramirez M. and de Lencastre H. (2010). "*Denmark(14)-230 clone as an increasing cause of pneumococcal infection in Portugal within a background of diverse serotype 19Alineages.*" Journal of Clinical Microbiology **48**(1): 101-108.

3. Almeida A. M., van Harten S., Campos A., Coelho A. V. and Cardoso L. A. (2010). "*The effect of weight loss on protein profiles of gastrocnemius muscle in rabbits: a study using 1d electrophoresis and peptide mass fingerprinting.*" Journal of Animal Physiology and Animal Nutrition **94**(2): 174-185.

4. Almeida A. M., Campos A., Francisco R., van Harten S., Cardoso L. A. and Coelho A. V. (2010). "*Proteomic investigation of the effects of weight loss in the gastrocnemius muscle of wild and nzw rabbits via 2d-electrophoresis and maldi-tof ms.*" Animal Genetics **41**(3): 260-272.

5. Almeida J. S., Deus H. F. and Maass W. (2010). "S3DB *core: a framework for rdf generation and management in bioinformatics infrastructures.*" BMC Bioinformatics **11**.

6. Alves M., Chaves I., Carrilho D., Veloso M. and Ricardo C. P. (2010). "*Detection of novel trypsin inhibitors in the cotyledons of Phaseolus vulgaris seeds.*" Journal of Plant Physiology **167**(10): 848-854.

7. Amaral A. I., Teixeira A. P., Martens S., Bernal V., Sousa M. F. Q. and Alves P. M. (2010). "*Metabolic alterations induced by ischemia in primary cultures of astrocytes: merging 13c nmr spectroscopy and metabolic flux analysis.*" Journal of Neurochemistry **113**(3): 735-748.

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9. Antunes A. M. M., Godinho A. L. A., Martins I. L., Oliveira M. C., Gomes R. A., Coelho A. V., Beland F. A. and Marques M. M. (2010). "*Protein adducts as prospective biomarkers of nevirapine toxicity.*" Chemical Research in Toxicology **23**(11): 1714-1725.

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11. Arraiano C. M., Matos R. G. and Barbas A. (2010). "*Rnase ii the finer details of the modus operandi of a molecular killer.*" Rna Biology **7**(3): 276-281.

12. Atilano M. L., Pereira P. M., Yates J., Reed P., Veiga H., Pinho M. G. and Filipe S. R. (2010). "*Teichoic acids are temporal and spatial regulators of peptidoglycan cross-linking in* Staphylococcus aureus." Proceedings of the National Academy of Sciences of the United States of America **107**(44): 18991-18996.

13. Bandeiras T. M., Romao C. V., Rodrigues J. V., Teixeira M. and Matias P. M. (2010). "*Purification, crystallization and x-ray crystallographic analysis of Archaeoglobus fulgidus neelaredoxin.*" Acta Crystallographica Section F-Structural Biology and Crystallization Communications **66**: 316-319.

14. Bandorowicz-Pikula J., Buchet R., Canada F. J., Clemancey M., Groves P., Jimenez-Barbero J., Lancelin J. M., Marcillat O., Pikula S., Sekrecka-Belniak A. and Strzelecka-Kiliszek A. (2010). "*Characterization of caged compounds binding to proteins by nmr spectroscopy.*" Biochemical and Biophysical Research Communications **400**(3): 447-451.

15. Batista A. P., Fernandes A. S., Louro R. O., Steuber J. and Pereira M. M. (2010). "*Energy conservation by* Rhodothermus marinus *respiratory complex i.*" Biochimica Et Biophysica Acta-Bioenergetics **1797**(4): 509-515.

16. Batista A. P., Franco C., Mendes M., Coelho A. V. and Pereira M. M. (2010). "*Subunit composition of* Rhodothermus marinus *respiratory complex i.*" Analytical Biochemistry **407**(1): 104-110.

17. Batista L., Monteiro S., Loureiro V. B., Teixeira A. R. and Ferreira R. B. (2010). "*Protein haze formation in wines revisited. The stabilising effect of organic acids.*" Food Chemistry **122**(4): 1067-1075.

18. Batista R. and Oliveira M. (2010). "*Plant natural variability may affect safety assessment data.*" Regulatory Toxicology and Pharmacology **58**(3):S8-S12.

19. Bento I., Silva C. S., Chen Z. J., Martins L. O., Lindley P. F. and Soares C. M. (2010). "*Mechanisms underlying dioxygen reduction in laccases. Structural and modelling studies focusing on proton transfer.*" Bmc Structural Biology **10**.

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21. Bernal P., Lemaire S., Pinho M. G., Mobashery S., Hinds J. and Taylor P. W. (2010). "*Insertion of epicatechin gallate into the cytoplasmic membrane of methicillin-resistant* Staphylococcus aureus *disrupts penicillin-binding protein (pbp) 2a-mediated beta-lactam resistance by delocalizing pbp2.*" Journal of Biological Chemistry **285**(31): 24055-24065.

22. Bernal V., Monteiro F., Carinhas N., Ambrosio R. and Alves P. M. (2010). "*An integrated analysis of enzyme activities, cofactor pools and metabolic fluxes in baculovirus-infected spodoptera frugiperda sf9 cells.*" Journal of Biotechnology **150**(3): 332-342.

23. Blesic M., Lopes J. N. C., Gomes M. F. C. and Rebelo L. P. N. (2010). "*Solubility of alkanes, alkanols and their fluorinated counterparts in tetraalkylphosphonium ionic liquids.*" Physical Chemistry Chemical Physics **12**(33): 9685-9692.

24. Borges N., Matsumi R., Imanaka T., Atomi H. and Santos H. (2010). "*Thermococcus kodakarensis mutants deficient in di-myo-inositol phosphate use aspartate to cope with heat stress.*" Journal of Bacteriology **192**(1): 191-197.

25. Botelho H. M., Leal S. S., Veith A., Prosinecki V., Bauer C., Frohlich R., Kletzin A. and Gomes C. M. (2010). "*Role of a novel disulfide bridge within the all-beta fold of soluble rieske proteins.*" Journal of Biological Inorganic Chemistry **15**(2): 271-281.

26. Brito J. A., Borges N., Santos H. and Archer M. (2010). "*Production, crystallization and preliminary x-ray analysis of ctp:Inositol-1-phosphate cytidylyltransferase from* Archaeoglobus fulgidus." Acta Crystallographica Section F-Structural Biology and Crystallization Communications **66**: 1463-1465.

27. Cabrita P., Fonseca C., Freitas R., Carreira R., Capelo J. L., Trigo M. J., Ferreira R. B. and Brito L. (2010). "*A secretome-based methodology may provide a better characterization of the virulence of listeria monocytogenes: preliminary results.*" Talanta **83**(2): 457-463.

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32. Carinhas N., Bernal V., Monteiro F., Carrondo M. J. T., Oliveira R. and Alves P. M. (2010). "*Improving baculovirus production at high cell density through manipulation of energy metabolism.*" Metabolic Engineering **12**(1): 39-52.

33. Carlos A. R., Semedo-Lemsaddek T., Barreto-Crespo M. T. and Tenreiro R. (2010). "*Transcriptional analysis of virulence-related genes in enterococci from distinct origins.*" Journal of Applied Microbiology **108**(5): 1563-1575.

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35. Carvalho S., Delgado R. and Felix V. (2010). "*Evaluation of the binding ability of a macrobicyclic receptor for anions by potentiometry and molecular dynamics simulations in solution.*" Tetrahedron **66(**45): 8714-8721.

36. de Castro C. A. N., Langa E., Morais A. L., Lopes M. L. M., Lourenco M. J. V., Santos F. J. V., Santos M., Lopes J. N. C., Veiga H. I. M., Macatrao M., Esperanca J. M. S. S., Marques C. S., Rebelo L. P. N. and Afonso C. A. M. (2010). "*Studies on the density, heat capacity, surface tension and infinite dilution diffusion with the ionic liquids c(4)mim ntf2 , c(4)mim dca , c(2)mim etoso3 and aliquat dca."* Fluid Phase Equilibria **294**(1-2): 157-179.

37. Catarino T., Pessanha M., De Candia A. G., Gouveia Z., Fernandes A. P., Pokkuluri P. R., Murgida D., Marti M. A., Todorovic S. and Salgueiro C. A. (2010). "*Probing the chemotaxis periplasmic sensor domains from Geobacter sulfurreducens by combined resonance raman and molecular dynamic approaches: no and co sensing.*" Journal of Physical Chemistry B **114**(34): 11251-11260.

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39. Chen Z. J., Durao P., Silva C. S., Pereira M. M., Todorovic S., Hildebrandt P., Bento I., Lindley P. F. and Martins L. O. (2010). "*The role of glu(498) in the dioxygen reactivity of cota-laccase from Bacillus subtilis.*" Dalton Transactions **39**(11): 2875-2882.

40. Cherian S. and Ferreira R. B. (2010). "*Analysis of Lupinus albus heat-shock granule proteins in response to high temperature stress.*" Biologia Plantarum **54**(3): 587-591.

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42. Collins T., Matzapetakis M. and Santos H. (2010). "*Backbone and side chain h-1, n-15 and c-13 assignments for a thiol-disulphide oxidoreductase from the antarctic bacterium pseudoalteromonas haloplanktis tac125.*" Biomolecular NMR Assignments **4**(2): 151-154.

43. Conceição T., Tavares A., Miragaia M., Hyde K., Aires-de-Sousa M. and de Lencastre H. (2010). "*Prevalence and clonality of methicillin-resistant* Staphylococcus aureus *(MRSA) in the Atlantic Azores islands: predominance of SCCmec types IV, V and VI.*" European Journal of Clinical Microbiology & Infectious Diseases **29**(5): 543-550.

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54. Costa V. P., Braga M. E. M., Guerra J. P., Duarte A. R. C., Duarte C. M. M., Leite E. O. B., Gil M. H. and de Sousa H. C. (2010). "*Development of therapeutic contact lenses using a supercritical solvent impregnation method.*" Journal of Supercritical Fluids **52**(3): 306-316.

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Book (authorship)

1. Wolsfberg M., Van Hook W. A., Paneth P. and Rebelo L. P. N. (2010). *Isotope effects in the chemical, geological, and bio sciences*. Springer. Heidelberg.

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Book chapters

1. Baptista E. S., Lamy E., Mau M., Silva F. C. and Coelho A. V. (2010) "Variation in salivary protein composition related to feeding behavior and its ecological implications." *in* W. Zhang and H. Liu (eds.) *Behavioral and chemical ecology*. (pp. 115-136).[S.l.]: NOVA Publishers
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Running Projects 2010

Projects coordinated by ITQB Researchers / Projects where ITQB researchers participate

as of December 31

Projects funded by the FCT

	Title	Project reference	Principal Investigator	Amount €	Period
1.	Exploiting genetic variability of resistance genes in major European food legumes to improve varieties for sustainable agriculture	ERA-PG/0008/2006	Carlota Vaz Patto	101.300	2007-2010
2.	Genomic research-assisted breeding for sustainable production of quality GRAPEs and WINE	ERA-PG/005/2006	Pedro Fevereiro	85.700	2007-2010
3.	Genome-wide analysis of short RNAs as modulators in dehydration stress tolerance using yolerant and genetic model systems	ERA-PG/001/2006	Pedro Fevereiro	126.588	2007-2010
4.	Two-dimensional micelles and emulsions in lipid bilayers resulting from caophylic/caophobic amphiphilicity of some phospholipids. Biological consequences	PTDC/QUI/68242/2006	Eurico de Melo	93.238	2007-2011
5.	Understanding sulfate respiration at molecular level: studies of two conserved membrane complexes	PTDC/QUI/68368/2006	Inês Cardoso Pereira	74.700	2007-2010
6.	Z-DNA and Z-RNA: the long road to a biological function	PTDC/SAU-MII/69084/2006	Maria Arménia Carrondo	159.643	2007-2011
7.	Functional analysis and origins of the pathophysiology of mutations within genes of the fatty acid oxidation pathway: implications in the multiple acyl-CoA dehydrogenase deficiency disorder	PTDC/SAU-GMG/70033/2006	Cláudio Gomes	70.801	2007-2011
8.	In search of ideal protein stabilisers: compound libraries inspired by solute from hyperthermophiles	PTDC/BIO/70806/2006	Pedro Lamosa	105.000	2007-2011
9.	Molecular Adaptation to Extreme Environments: Structural Studies of Proteins Involved in the Synthesis of Osmolytes in (hyper)thermophylic micro-organisms	PTDC/QUI/71142/2006	Pedro Matias	85.500	2007-2011
10.	Contribution of the capsular polysaccharide to the inflammatory ability of the bacterial peptidoglycan	PTDC/SAU-MII/75696/2006	Sérgio Filipe	159.686	2007-2011
11.	Impact of nonencapsulated strains on the ecology and pathogenesis of *Streptococcus pneumoniae*	PTDC/BIA-MIC/64010/2006	Raquel Sá Leão	110.000	2008-2011
12.	Chromatin remodelling and abiotic stresses responses in rice	PTDC/BIA-BCM/64215/2006	Ana Paula Santos	52.000	2008-2011
13.	Chiral N-heterocyclic carbene complexes for asymmetric catalysis and for C-H activation processes	PTDC/QUI/64458/2006	Beatriz Royo	80.100	2008-2011
14.	Structural, bioenergetic and dynamic aspects of respiratory chain complexes studied by vibrational and spectroelectrochemical methods	PTDC/QUI/64550/2006	Smilja Todorovic	44.800	2008-2010
15.	Spatial and temporal organization of *Staphylococcus aureus* cell division	PTDC/BIA-BCM/66449/2006	Mariana Pinho	157.000	2008-2011
16.	Investigating the energy transduction Q-cycle mechanism in complexes of respiratory chains	PTDC/BIA-PRO/66557/2006	Manuela Pereira	96.000	2008-2011
17.	Searching for the functional/structural minimum common denominator in haem-copper oxygen reductases	PTDC/QUI/66559/2006	Manuela Pereira	70.700	2008-2011
18.	A structural genomics approach to membrane transport proteins from Archaea	PTDC/BIA-PRO/66833/2006	Margarida Archer	45.000	2008-2010
19.	Iron metabolism in sulphate reducing bacteria	PTDC/BIA-PRO/67107/2006	Lígia M. Saraiva	83.000	2008-2010
20.	Iron Metabolism Study in Deinococcus radiodurans-Novel strategies	PTDC/BIA-PRO/67240/2006	Célia Romão	62.600	2008-2011
21.	Microbial enzymes involved in superoxide and nitric oxide reduction	PTDC/BIA-PRO/67263/2006	Miguel Teixeira	116.000	2008-2011

	Title	Project reference	Principal Investigator	Amount €	Period
22.	Integrated view of the early steps in bacterial cell wall synthesis	PTDC/BIA-MIC/67845/2006	Mariana Pinho	132.384	2008-2011
23.	Biochemical and Structural Studies of UDP-Glucose Dehydrogenases	PTDC/QUI/67925/2006	Carlos Frazão	77.480	2008-2011
24.	Determining the role of dirigent proteins during grapevine/Uncinula necator interactions	PTDC/BIA-QOR/68211/2006	Ricardo B. Ferreira	77.256	2008-2011
25.	Quinol oxidation by membrane cytochromes c widely implicated in bacterial respiration - structural studies of the model NrfHA complex	PTDC/BIA-PRO/68486/2006	Inês Pereira	92.000	2008-2010
26.	Towards the understanding of the energetic and structural interplay between metal sites and protein folding	PTDC/QUI/70101/2006	Cláudio Gomes	70.800	2008-2012
27.	Towards biohydrogen production - study of a high-activity, oxygen-resistant bacterial hydrogenase	PTDC/BIA-PRO/70429/2006	Pedro Matias	112.000	2008-2011
28.	Analysis of the natural variability in Rice (Oryza sativa L.) through EcoTILLING in salt and cold tolerance genes	PTDC/AGR-GPL/70920/2006	Margarida Oliveira	121.284	2008-2011
29.	Understanding how hyperthermophilic microorganisms cope with heat stress: the role of unique polyolphosphodiester compounds	PTDC/BIA-MIC/71146/2006	Helena Santos	129.000	2008-2011
30.	Regulatory networks on *Staphylococcus aureus* cell wall physiology	PTDC/BIA-MIC/71168/2006	Hermínia de Lencastre	136.979	2008-2010
31.	Elucidating the Critical Role of RNase II family of Enzymes in RNA metabolism: Structural and Functional Studies	PTDC/BIA-MIC/71453/2006	Sandra Viegas	115.766	2008-2011
32.	Multilevel modelling of physical and biochemical processes in phototrophic biofilms	PTDC/BIA-MIC/72512/2006	Andreas Bohn	94.000	2008-2011
33.	Ionic Liquids - Fundamental Study of Properties	PTDC/CTM/73850/2006	José Esperança	44.350	2008-2010
34.	Transcriptional regulation of the genes encoding the flavodiiron protein ROO and the cytochrome BD respectively of the anaerobe bacterium Desulfovibrio gigas upon nitrosative stress	PTDC/BIA-MIC/70650/2006	Claudina Rodrigues Pousada	189.400	2009-2012
35.	Development of new macrocyclic bifunctional chelators for metalloradiopharmaceuticals	PTDC/QUI/67175/2006	Rita Delgado	101.227	2009-2011
36.	Investigation of redox-state-specific protein-protein interactions and energy transduction in the electron transfer chains of sulfate reducing bacteria	PTDC/QUI/65640/2006	David Turner	79.085	2009-2011
37.	Waste Elimination using Ionic Liquid Bio-Engineered Eukariotic Organisms	PTDC/QUI/71331/2006	José Esperança	50.700	2009-2011
38.	Chromosome cohesion and DNA repair in Arabidopsis	PTDC/BIA-BCM/64192/2006	José António Nunes	45.750	2008-2011
39.	Impact of the conjugate pneumococcal vaccines on pneumococcal ecology	PTDC/SAU-ESA/65048/2006	Raquel Sá Leão	153.667	2009-2011
40.	Site-specific labeling of proteins in vitro, in vivo and at the cell surface by a novel type of transglutaminase isolated from spores of Bacillus subtilis	PTDC/BIO/73946/2006	Adriano Henriques	87.555	2009-2011
41.	Characterization of sea urchins temporary adhesives by mass spectrometry-based proteomics	PTDC/DG-MAR/80012/2006	Romana Santos	38.448	2008-2011
42.	Molecular Evaluation and Characterization of Tolerance Mechanisms to Adverse Environmental Conditions in Coffea sp. - Central Role of the Oxidative Stress Control at Leaf Level	PTDC/AGR-AAM/64078/2006	Manuela Chaves	29.930	2007-2011
43.	DynaMo - Dynamical modeling, control and optimization of metabolic networks	PTDC/EEA-ACR/69530/2006	Helena Santos	81.621	2007.2011
44.	Enzymatic degradation and synthesis of Azo and antraquionic dyes	PTDC/BIO/72108/2006	Ana V. Coelho	16.800	2007-2011

	Title	Project reference	Principal Investigator	Amount €	Period
45.	The wild relatives of Beta: genetic diversity assessment and biochemical studies	PTDC/AGR-AAM/73144/2006	Cândico Pinto Ricardo	46.740	2007-2011
46.	BioMode - From data to modelling on biofilm phenotype	PTDC/BIO/73550/2006	Andreas Bohn	11.760	2007-2010
47.	Gas Phase Reactions on Ionic Liquids	PTDC/QUI/66199/2006	Luís Paulo Rebelo	12.500	2008-2010
48.	Synthesis and Characterization of New and not so-New Ionic Liquids	PTDC/QUI/66826/2006	Luís Paulo Rebelo	13.800	2008-2011
49.	Molecular design of novel aza-bridged calixarene receptors for medicinal chemistry: encapsulation of lanthanide ions and chiral resolution of drugs	PTDC/QUI/68582/2006	Rita Delgado	16.620	2008-2010
50.	High Pressure CO2-Induced Melting of Salts: New Ionic Liquids	PTDC/QUI/70383/2006	Manuel N. Ponte	25.020	2008-2010
51.	Protein glycation and transthyretin amyloidogenesis in yeast: A model system of neurodegenerative amyloid diseases	PTDC/QUI/70610/2006	Ana V. Coelho	48.050	2008-2010
52.	Integrated Isolation, Bio- and Organic-Synthetic Transformations of Portuguese Natural Resources	PTDC/QUI/73061/2006	Cristina Silva Pereira	30.000	2008-2011
53.	Polymer plasticization and compatibility using Green Technologies. Application of ionic liquids and supercritical fluids	PTDC/QUI/71398/2006	Luís Paulo Rebelo	37.800	2008-2011
54.	Anchoring Basic Parameters for Fundamental Predictive Models in Liquid Salt Systems	PTDC/QUI/72903/2006	José Esperança	10.800	2009-2011
55.	Sol-gel entrapped cutinase: Understanding enzyme/matrix interactions via fluorescence, NMR and DRIFT spectroscopies, and site-directed mutagenesis	PTDC/QUI/64744/2006	Isabel Sá Nogueira	15.000	2009-2011
56.	Anthocyanins as natural photoprotectors	PTDC/QUI/65728/2006	Eurico de Melo	9.600	2009-2011
57.	Respiratory rehabilitation in Amyotrophic Lateral Sclerosis: clinical and biochemical impact	PIC/IC/82765/2007	Júlia Costa	86.968	2009-2011
58.	MIT – Bioengineering Systems		Claudio M. Soares	446.672	2006-2011
59.	Structural and functional study of the proteins mediating electron transfer between microorganism and solid substrates with relevance for bio-energy production	MIT-PT/BS-BB/0014/2008	Ricardo Louro	147.936	2009-2012
60.	Pathogenomics of increased Clostridium difficile virulence	ERA-PTG/SAU/0002/ 2008	Adriano Henriques	181.800	2009-2012
61.	Bio-based production of chemical building blocks: Corynebacterium glutamicum as a platform for new and efficient bioprocesses.	ERA-IB-BIO/0002/2008	Helena Santos	185.424	2009-2012
62.	Cork Oak ESTs Consortium – Bioinformatics Platform	Sobreiro/0030/2009	Andreas Bohn	17.322	2009-2010
63.	Development of ultras-sensitive detection methodos and plant Nano-Vacinnes for the Fungi Fusarium spp using nanotechnological devices	Nano/NTec-SQA/0131/2007	Abel Oliva	119.792	2009-2011
64.	Unraveling the mechanisms of nitrosative stress resistance of Helicobacter pylori: relevance for immune subversion and infectiousness	PTDC/SAU-MII/098086/2008	Marta Justino	153.144	2010-2013
65.	Mind the gap: How extracellular respiration is linked across the periplasmic space to the cytoplasmic oxidation of substrates. A key step in bioenergy harvesting	PTDC/BIA-PRO/098158/2008	Ricardo Louro	148.320	2010-2013
66.	Functional study of a diiron protein with the unique role of repairing iron-sulphur clusters	PTDC/BIA-PRO/098224/2008	Lígia M. Saraiva	199.980	2010-2013
67.	Unravelling pneumococcal interactions in the nasopharyngeal niche	PTDC/BIA-BEC/098289/2008	Raquel Sá Leão	191.740	2010-2013
68.	Engineering mini Superoxide Dismutases with tunable redox properties	PTDC/QUI-BIQ/098406	Olga Iranzo	162.888	2010-2013

	Title	Project reference	Principal Investigator	Amount €	Period
69.	Proteomics of Bacterial Cell Division	PTDC/BIA-MIC/098637/2008	Dirk-Jan Scheffers	190.991	2010-2013
70.	Development of imidazolium and oxazoline derivatized cyclopentadienyl compounds for biphasic catalysis and asymmetric processes	PTDC/QUI-QUI/098682/2008	Beatriz Royo Cantabrana	62.992	2010-2013
71.	The cell wall synthetic machinery of *Staphylococcus aureus* and its response to the presence of antibiotics	PTDC/BIA-MIC/099151/2008	Mariana Pinho	198.420	2010-2013
72.	Single cell studies of the action of antibiotics	PTDC/BIA-BCM/099152/2008	Mariana Pinho	180.000	2010-2013
73.	Breeding for salinity tolerance in rice and identification of key genes/proteins affecting seed set under salt stress	PTDC/AGR-AAM/099234/2008	Sónia Negrão	137.916	2010-2013
74.	Exploiting antioxidants, flavours and aromas diversity on 'broa' bread maize breeding	PTDC/AGR-ALI/099285/2008	Carlota Vaz Patto	103.992	2010-2013
75.	Nanopore based single-molecule ionic current spectroscopy for nanoparticle based catalysis	PTDC/QUI-QUI/099599/2008	Yann Astier	61.352	2010-2012
76.	Functional analyses of inclusion membrane proteins of Chlamydia trachomatis	PTDC/SAU-MII/099623/2008	Jaime Mota	199.377	2010-2013
77.	Functional analysis of new transcriptional regulators involved in abiotic stress responses in rice	PTDC/BIA-BCM/099836/2008	Nelson Saibo	140.760	2010-2013
78.	Integration of transcriptomic, proteomic and metabolomics profiles to understand the role of T6P in the water deficit response and recovery in Medicago truncatula	PTDC/AGR-GPL/099866/2008	Susana Araújo	189.382	2010-2013
79.	PneumoCaPTS - Regulation of virulence factors by glucose-dependent catabolite repression	PTDC/BIA-MIC/099963/2008	Ana Rute Neves	198.804	2010-2013
80.	Oxidative stress response mechanisms in Deinococcus radiodruans	PTDC/QUI-BIQ/100007/2008	Célia Romão	88.488	2010-2013
81.	Structural and functional investigation of type II NADH:quinone oxidoreductases	PTDC/BIA-PRO/100288/2008	Manuela Pereira	124.620	2010-2013
82.	Energy Transduction by respiratory Complex I	PTDC/QUI-BIQ/100302/2008	Manuela Pereira	124.620	2010-2013
83.	Small Scale Structural Metallomics Project in Deinococcus radiodurans	PTDC/BIA-PRO/100365/2008	Célia Romão	132.888	2010-2013
84.	Understanding structure-activity relationships in peptide dendrimers using a molecular modelling approach	PTDC/QUI-QUI/100416/2008	António Baptista	131.220	2010-2013
85.	Lost in Septation: Characterization of a novel regulatory pathway of cell division and morphology centered on the bolA gene	PTDC/EBB-BIO/100507/2008	Cecília M. Arraiano	149.000	2010-2013
86.	Examining a Multifunctional RNA Degrading Machine: the Arabidopsis Catalytic subunit of the Exosome	PTDC/AGR-GPL/100509/2008	Cecília M. Arraiano	163.491	2010-2013
87.	Study of an ancient mode of energy metabolism: the dissimilatory reduction of sulfite	PTDC/QUI-BIQ/100591/2008	Inês C. Pereira	173.736	2010-2013
88.	Glycosylation and Lewis X motif in neuronal tissue	PTDC/SAU-NEU/100724/2008	Júlia Costa	100.000	2010-2013
89.	Tracking the synthesis of the Chlamydia cell wall - a biological paradox in intracellular and evasive bacteria	PTDC/BIA-MIC/100747/2008	Sérgio Filipe	160.000	2010-2013
90.	Disentangling single electron transfer steps in an enzyme: experimental and theoretical approach	PTDC/BIA-PRO/100791/2008	Smilja Todorovic	120.756	2010-2013
91.	PneumoSyS - A systems biology approach to the role of pneumococcal carbon metabolism in colonization and invasive disease.	PTDC/SAU-MII/100964/2008	Ana Rute Neves	199.650	2010-2013
92.	Metabolic circuits in inflicted bacterial cell death	PTDC/BIA-MIC/101375/2008	Rita Sobral	156.825	2010-2013
93.	Identification of genes responsible for drought tolerance in Jatropha curcas, an emerging biodiesel plant	PTDC/AGR-GPL/101435/2008	Margarida Oliveira	129.696	2010-2013
94.	Mössbauer spectroscopy and density functional theory studies of NO and O2 reductases	PTDC/BIA-PRO/101837/2008	Filipe Oliveira	148.452	2010-2013

	Title	Project reference	Principal Investigator	Amount €	Period
95.	Hybrid electro-optical microfluidic device for single cell analysis	PTDC/SAU-BEB/102247/2008	Abel Oliva	188.000	2010-2013
96.	Innovative Strategies to Combat Foodborne Pathogens: Examining the Role of RNases and Small RNAs	PTDC/CVT/102293/2008	Cecília M. Arraiano	175.588	2010-2013
97.	Breaking Down The Wall - Microbial Hemicellulases for saccharification	PTDC/AGR-AAM/102345/2008	Isabel Sá Nogueira	125.328	2010-2013
98.	MICROPHYTE: Metabolic engIneering of Chlamydomonas and enviRonmental OPtimization for HYdrogen producTion and rElease	PTDC/EBB-EBI/102728/2008	Francisco Malcata	140.000	2010-2013
99.	Exploiting transcriptional variation to identify genes underlying quantitative resistance to major grain legume pathogens	PTDC/AGR-GPL/103285/2008	Carlota Vaz Patto	199.668	2010-2013
100.	Molecular mechanisms of energy transduction	PTDC/BIA-PRO/103310/2008	Miguel Teixeira	199.400	2010-2013
101.	Structural biology of membrane transporters from Archaea	PTDC/BIA-PRO/103718/2008	Margarida Archer	151.800	2010-2013
102.	Regulation of synaptogenesis by kinase Cdk5 and Shank3: Biochemical and Structural Studies	PTDC/SAU-NEU/103720/2008	Margarida Archer	120.000	2010-2013
103.	Metabolic engineering of an anaerobic bacterium for biological hydrogen production	PTDC/BIA-MIC/104030/2008	Inês C. Pereira	176.484	2010-2013
104.	Molecular characterization of organ regeneration in starfish - a proteomic approach toward the discovery of new regeneration factors	PTDC/MAR/104058/2008	Ana V. Coelho	64.800	2010-2013
105.	Including protonation effects in the simulation of peptides and proteins in membrane environments	PTDC/BIA-PRO/104378/2008	António Baptista	126.240	2010-2013
106.	Developmental role of the IRE1/Xbp1 signaling pathway during photoreceptor differentiation in Drosophila melanogaster	PTDC/SAU-OBD/104399/2008	Pedro Domingos	120.000	2010-2013
107.	The best of two worlds: Ionic liquids as Active Pharmaceutical Ingredients	PTDC/EQU-EPR/104554/2008	Isabel Marrucho	127.068	2010-2013
108.	Mechanisms of post-transcriptional regulation in the Drosophila Unfolded Protein Response	PTDC/BIA-BCM/105217/2008	Pedro Domingos	199.152	2010-2013
109.	Study of pH-dependent protein misfolding using state-of-the-art molecular modeling methods	PTDC/QUI-BIQ/105238/2008	António Baptista	151.188	2010-2013
110.	Integrative Bioinformatics for Molecular Epidemiology of gram-positive pathogens	PTDC/EIA-EIA/105245/2008	Jonas Almeida	110.000	2010-2013
111.	Metallo Beta-hairpins: in search of new recyclable catalysts for greener chemistry	PTDC/QUI-QUI/105504/2008	Olga Iranzo	154.128	2010-2013
112.	Control of Iron Homeostasis by the Yeast Activator proteins (Yaps) in eukaryotic cells	PTDC/BIA-MIC/108747/2008	Claudina R. Pousada	183.648	2010-2013
113.	Exploiting the type II phosphomannose isomerase BceAJ as a new target for the development of new antimicrobials and for biotechnological applications	PTDC/EBB-BIO/098352/2008	Carlos Frazão	48.432	2010-2013
114.	Sustainable membrane bioreactors for advanced wastewater treatment: a molecular approach	PTDC/EBB-EBI/098862/2008	Ana V. Coelho	18.320	2010-2013
115.	AsyFlower - Evolution of the gene regulatory network controlling flower dorsoventral asymmetry	PTDC/AGR-GPL/098873/2008	Jorge Almeida	17.340	2010-2013
116.	Transgeneration evaluation of rice transcriptomic/proteomic alterations caused by genetic modifications and other stresses	PTDC/EBB-BIO/098983/2008	Margarida Oliveira	18.572	2010-2013
117.	AQUAVITIS - Understanding water transport in Vitis vinifera: biochemical characterization of aquaporins upon their heterologous expression in yeast	PTDC/AGR-AAM/099154/2008	Rita Francisco/Manuela Chaves	13.200	2010-2013
118.	Spheres of Ecosystem Response to Nitrogen (SERN): A case study in a Mediterranean-type ecosystem in southern Portugal	PTDC/BIA-BEC/099323/2008	Alla Shvaleva	53.136	2010-2013
119.	Please MOC it! - Metal-Organo-Catalysis an emerging concept	PTDC/QUI-QUI/099389/2008	Beatriz Royo	12.000	2010-2013

	Title	Project reference	Principal Investigator	Amount €	Period
120.	Phenotypic plasticity of maritime pine to climate change	PTDC/AGR-CFL/099614/2008	Manuela Chaves	9.000	2010-2013
121.	Genetic analysis of suber differentiation in Quercus suber L	PTDC/AGR-AAM/100465/2008	Cândido Pinto Ricardo	21.600	2010-2013
122.	Nitrogen-fixing biofertilizers for gramineous crops	PTDC/AGR-AAM/100577/2008	Nuno Borges	21.600	2010-2013
123.	GrapeBerryFactory - Sugars, acids, phenolics and water on grape berry development and ripening	PTDC/AGR-ALI/100636/2008	Manuela Chaves	30.000	2010-2013
124.	Microbial contribution to the valorization of waste/ by-products from biofuels production	PTDC/AAC-AMB/100790/2008	Helena Santos	12.000	2010-2013
125.	T.caespititius chemotypes: molecular, genetic and biotechnological approaches to understand chemical polymorphism	PTDC/AGR-GPL/101334/2008	Margarida Oliveira	25.040	2010-2013
126.	Molecular Modeling of Ionic Liquids: from Structure to Thermodynamics	PTDC/QUI-QUI/101794/2008	Luís Paulo Rebelo	33.600	2010-2013
127.	Engineered biomimetics for large-scale enrichment of phosphoproteins	PTDC/EBB-BIO/102163/2008	Olga Iranzo	27.720	2010-2013
128.	Plant responses to trace element toxicity: cellular mechanisms for detoxification and tolerance	PTDC/AGR-AAM/102821/2008	Ana V. Coelho	36.000	2010-2013
129.	IMPROVIRON: IMproved PROductiVity and IRON nutrition in legume grains	PTDC/AGR-GPL/102861/2008	Cândido Pinto Ricardo	27.741	2010-2013
130.	Separation of aromatic/aliphatic hydrocarbon mixtures by simulated countercurrent adsorption using nonvolatile solvents	PTDC/EQU-EQU/102949/2008	José Esperança	28.728	2010-2013
131.	Development of Novel Organic Energetic Materials based on Ionic Liquids	PTDC/CTM/103664/2008	Luís Paulo Rebelo	42.427	2010-2013
132.	Valorization of the Mediterranean energy crops giant reed and cardoon by integrated bio-chemical conversion to dissolving grade pulps, fuel ethanol, xylitol and lignin-based products - a complex LCF biorefinery concept	PTDC/AGR-CFL/103840/2008	Lígia O. Martins	27.956	2010-2013
133.	The Development and Rationalization of Stereoselective Reactions in Some Chiral Systems. A mixed experimental and theoretical approach	PTDC/QUI-QUI/104056/2008	Christopher Maycock	40.900	2010-2013
134.	Assessment of genetic and genomic resources of Cork Oak: the basis towards a prospective management	PTDC/AGR-GPL/104966/2008	Célia Miguel	21.748	2010-2013
135.	BIOMYR: Towards the metabolic engineering of beta-myrcene pathway of Pseudomonas sp. M1: functional genomics and structural biochemistry approaches	PTDC/EBB-BIO/104980/2008	Carlos Frazão	32.242	2010-2013
136.	Mycobacterium Tuberculosis: bioinformatic and structural strategies towards treatment	NEW INDIGO ERA NET	Patrick Groves	13.600	2010-2012

Projects funded by the Fundação Calouste Gulbenkian

137.	Community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) in Portugal: a pilot study focusing on an emerging public health concern	MM/P-99911	Hermínia de Lencastre	61.918	2009-2012

	Title	Project reference	Principal Investigator	Amount €	Period
Projects funded by the European Comission					
138.	Genomics to combat resistance against antibiotics in community – acquired LRTI in Europe (GRACE)	LSHM-CT-2005-518226	Hermínia de Lencastre	129.216	2006-2011
139.	Sustainable water use Securing Food production in dry areas of the mediterranean region (SWUP-MED)	212337	Manuela Chaves	310.880	2008-2012
140.	Structural Biology of Membrane Proteins (SBMPs)	PITN-GA-2008-211800	Margarida Archer	284.099	2008-2012
141.	A comprehensive dissection of pneumococcal-host interactions (PNEUMOPATH)	HEALTH-F3-2009-222983	Hermínia de Lencastre	150.000	2009-2012
142.	CONtrol of COmmunity-acquired MRSA: Rationale and Development of counteractions (CONCORD)	HEALTH-F3-2008-222718	Hermínia de Lencastre	202.512	2009-2011
143.	Translational Research on Combating Antimicrobial Resistance (TROCAR)	HEALTH-F3-2008-22303	Hermínia de Lencastre	196.152	2009-2011
144.	Strategies for organic and low-input integrated breeding and management (SOLIBAM)	245058	Carlota Vaz Patto	261.332	2010-2014
Individual fellowships by the European Commission					
145.	Designing metallopeptides for the removal of superoxide radicals (MFRosPep)	PIRG03-GA-2008-230896	Olga Iranzo	100.000	2008-2012
146.	Analysis of the cellular function of type III secretion effectors of Chlamydia trachomatis (CHLTRT3SE)	PERG03-2008-230954	Jaime Mota	45.000	2009-2011
147.	ER Stress and Photoreceptor Degeneration in Drosophila (DROSOERSTRESS)	Pirgga-2008-230935	Pedro Domingos	100.000	2008-2012
148.	Spatial organization and dynamics of Escherichia coli RNA degradation machinery (RNaseDYNAMICS)	PIEF-GA-2009-254183	Michal Malacki	149.783	2010-2013
149.	Crystallization in ionic liquid solutions (CRYSTILS)	PERG-GA-2009-249182	Magdalena Kowacz	36.000	2010-2013
150.	Structure of herperviral cell access (SHerpA)	PIEF-GA-2009-251982	Marco Patrone	204.903	2010-2013
151.	New halogenated ionic liquids as a novel task-specific fluids (HALOGENLIS)	PIEF-GA-2009-252355	Ana Belen	153.864	2010-2013
Project funded by the Ministry of National Defence					
152.	Chemical and Biological Single Molecule Detection Roaming Robot (SENTINEL)		Yann Astier	160.000	2010-2013
Projects funded by PFIZER					
153.	Pneumo Y – Pneumococcal colonization patterns in young children living in urban and rural areas of Portugal in the era of the 13-valent conjugate vaccine.	WS857151	Raquel Sá Leão	225.000	2010-2013
154.	Pneumococcal colonization patterns in the elderly living urban and rural areas of Portugal	0887X1-4629	Raquel Sá Leão	151.000	2010-2012
Project funded by EEA and Norway Grants					
155.	Awake of Green Biotech in Portugal: waste elimination using genetically manipulated fungal species in an ionic liquid environment		Cristina Silva Pereira	1.241.143	2007-2011
Subcontracting Parties – Georgia Institute of Technology (amounts usd)					
156.	Assessment of pathway design through multi-NSF level modeling and experiments		Helena Santos	30.000	2010-2012

Editorial Boards

In 2010, ITQB researchers sat on the editorial boards of the following international journals.

Bioinorganic Chemistry and Applications
Cláudio M. Gomes

Biotechnology and Bioengineering
Manuel J.T. Carrondo

Biotechnology Letters
Manuel J.T. Carrondo

BMC Biotechnology
Paula M. Alves

Ciência e Técnica Vitivinícola
Vitória San Romão

Current Gene Therapy
Manuel J.T. Carrondo

European Journal of Clinical Microbiology & Infectious Diseases
Hermínia de Lencastre

European Journal of Inorganic Chemistry
Carlos C. Romão

Extremophiles
Helena Santos is Managing Editor and Reviews Editor

FEMS Microbiological Reviews
Cecília M. Arraiano

Functional Plant Biology
Manuela Chaves is Associate Editor

International Journal of Molecular Science
Luís Paulo N. Rebelo is Editorial Advisor

Journal of Berry Research
Ricardo Boavida Ferreira

Journal of Biological Inorganic Chemistry
Maria Arménia Carrondo

Journal of Biomedicine and Biotechnology
Cláudio M. Soares

Journal of Biotechnology
Manuel J.T. Carrondo is Associate Editor

Journal of Biotechnology
Paula M. Alves

Journal of Chemical Engineering Data
Luís Paulo N. Rebelo is member of the Editorial Advisory Board

Journal of Experimental Botany
Manuela Chaves

Microbial Drug Resistance
Hermínia de Lencastre

Open Source Journal Plos One
Yann Astier is Academic Editor

Plant Cell Tissue and Organ Culture
Margarida Oliveira is Associate Editor

The Open Mycology Journal
Claudina Rodrigues-Pousada

Tree Physiology
Célia Miguel

WIRES RNA (Wiley Interdisciplinary Reviews on RNA)
Cecília M. Arraiano

YEAST
Claudina Rodrigues-Pousada

"Advances in Green Chemistry and Sustainable Chemistry" issue of the **International Journal of Molecular Science**
Luís Paulo N. Rebelo was Guest Editor

Education Output

PhD Theses 2010

Catarina Heitor Gomes (Biochemistry)
Amyotrophic lateral sclerosis: mammalian cell models, copper-zinc superoxide dismutase and biological characteristics
Supervisor: **Júlia Costa**

Catarina Sá de Almeida Amaral (Biology)
Role of Yap8 and Yap1 b-Zip transcription factors of Saccharomyces cerevisiae exposed to arsenic stress
Supervisor: **Claudina R. Pousada**

José Mário Leitão Ribeiro (Biochemistry)
The importance of the extensin network formation in the definition of the primary cell wall properties
Supervisor: **Philip Jackson**

Ana Raquel Viegas Correia (Structural Biochemistry)
Protein Folding and Disease: The mitochondrial protein frataxin
Supervisor: **Cláudio M. Gomes**

Jennifer Ann Geiger (Genética Molecular)
Wound Healing: a genetic approach in Drosophila
Supervisor: **António Jacinto**

Filipa Pontes de Moraes - IGC-PD (Biology)
Tbx1 and Bmp2 in the development of the ear, neural crest and pharyngeal system in mice
Supervisor: **Moisés Mallo**

Rita Maria Martins de Sousa Maia Malpique (Engenharia Biomédica)
Novel cryopreservation strategies for cell-therapies and pre-clinical research
Supervisor: **Paula M. Alves**

Ana Teresa de Carvalho Negrão Serra (Biotechnology)
Valorization of traditional portuguese apples and cherries. biochemical characterization and development of functional ingredients
Supervisor: **Catarina Duarte**

Ricardo Jorge Alexandre Águas - IGC-PD (Epidemiology)
The versatility of mathematical models: From biological mechanisms to epidemiological scenarios
Supervisor: **Gabriela Gomes**

Paulo Jorge Rêgo Durão (Biotechnology)
CotA-laccase from *bacillus subtilis:* structure-function studies of catalytic copper centers
Supervisor: **Lígia O. Martins**

Joana Raquel Morgado da Rocha (Structural Biochemistry)
Structure to function studies in udp-glucose dehydrogenases and nitroreductases
Supervisor: **Carlos Frazão**

Eda Rita Gomes Soares Machado (Biology)
Characterization of the glycosylation of human tumor cells
Supervisor: **Júlia Costa**

Leonor da Gama Carvalho Norton (Celular Technology)
Expression of antibodies and retroviral vectors from defined chromosomal sites: strategies towards reliable production systems
Supervisor: **Paula M. Alves**

Ricardo Miguel Neto da Silva - PGDB (Developoment Biology)
Mutual dependence between myc and the hippo pathway in growth regulation and homeostasis
Supervisor: **Moisés Mallo**

António Manuel Missionário Roldão (Systems Biology)
Production optimization of rotavirus-like particles: a systems biology approach
Supervisor: **Manuel J. T. Carrondo**

Maria Joana Patrício Gonçalves de Sá - PGDB (Systems Biology)
Communication and choice in yeast mating
Supervisor: **Mónica Bettencourt Dias**

Marta Alexandra Marques Alves (Plant Physiology)
Responses of higher plants to boron deficiency
Supervisor: **Cândido Pinto Ricardo**

Ana Patrícia Neto Refojo (Bioenergetics)
The alternative complex iii from *rhodothermus marinus* – a prototype of a new family of quinol: electron acceptor oxidoreductase
Supervisor: **Miguel Teixeira**

Ana Paula Martins Farinha Resende (Molecular Biology)
Proteomic and transcriptomic approaches to abiotic stress tolerance in rice (Oryza sativa L.)
Supervisor: **Margarida Oliveira**

Ana Paula Gonçalves Batista (Bioenergetics)
Energy transduction by respiratory complex I
Supervisor: **Miguel Teixeira**

Bruno Emanuel Ferreira de Sousa Correia (Computational Biology)
Computational design with flexible backbone sampling for protein remodeling and scaffolding of complex binding sites
Supervisor: **Cláudio M. Soares**

Tiago Manuel Ferreira da Silva Vicente (Biotechnology)
Downstream processing development of enveloped viruses for clinical applications: Innovative tools for rational process optimization
Supervisor: **Manuel J. T. Carrondo**

Bárbara Joana de Almeida Henriques (Structural Biochemistry)
Defective protein folding and function in metabolic disorders: studies on the mitrochondrial flavoenzyme ETF
Supervisor: **Cláudio M. Gomes**

Sébastien M. Potot (Biotechnology)
Metabolic and morphogenetic engineering of *bacillus subtilis*: biotechnology for industry
Supervisor: **Adriano O. Henriques**

Lígia Isabel dos Santos Nobre (Molecular Genetics)
Unravelling novel modes of antimicrobial action
Supervisor: **Lígia M. Saraiva**

Ana Sofia Fernandes de Oliveira (Computational Biology)
Molecular modelling of abc transporters: from atp hydrolysis to substrate transport
Supervisor: **Cláudio M. Soares**

Zita Carvalho dos Santos (Cellular Biology)
Evolution and biogenesis of microtubule-derived structures
Supervisor: **Mónica Bettencourt Dias**

Ana Margarida Janeiro Lopes dos Santos Azevedo (Biology)
Molecular almond shoot organogenesis: an integrated strategy to identify key genes in adventitious regeneration
Supervisor: **Margarida Oliveira**

Hugo Miguel Raposo Correia Botelho (Biophysics)
Metal Ions and Protein Folding: Conformational and Functional Interplay
Supervisor: **Cláudio M. Gomes**

Vítor Manuel Bordona Sousa Paixão - ITQB/PGDB (Biophysics)
NMR studies of tetrahaem cytochromes from *D. desulfuricans* and *S. frigidimarina*
Supervisor: **David Turner**

Teresa Margarida Gomes da Conceição (Molecular Biology)
Staphylococcus aureus: towards a comprehensive view on epidemiology and clonal spread
Supervisor: **Hermínia de Lencastre**

Nelson Emanuel da Silva Frazão (Molecular Biology)
Massive shift in the pneumococcal nasopharyngeal flora after the 7-valent conjugate vaccine: epidemiological studies and testing pathogenic potential in animal models
Supervisor: **Hermínia de Lencastre**

Rita Margarida Morais Tavares-PGDB (Structural Immunology)
The enzyme a20 maintains immune homeostasis and prevents autoimmunity
Supervisor: **Sukalyan Chatterjee/Averil Ma**

Ana Sofia Roldão Lopes Amaral Duque (Molecular Biology)
Transformation of *medicago truncatula* with the arginine decarboxylase gene to modify polyamine metabolism toward water deficit resistance
Supervisor: **Pedro S. Fevereiro**

Research Training
University Extension Courses

Scientific Training A (40 ECTS)
Francesco Barbero

Scientific Training D (15 ECTS)
Daniela Filipa Dias Isidoro

Research Integration
Andreia Filipa Campos Tavares
Carolina Piçarra Cassona
Fábio Mira Rocha Sabino
Gabriela Fernandes Henriques
Joana Mafalda Diogo Portela
Rafael de Santana Nunes
Renata Isabel Lino dos Santos
Rui Pedro Marcos Maurício
Saúl Alves Graça da Silva
Vanessa Filipa Coelho Santos
Ana Patrícia Correia Almeida
Joana Cristina Pedro Rodrigues

Scientific Events
Seminars at ITQB

Scans

Once a week at 12 o'clock, ITQB researchers give a seminar for the whole institute. These Science Conferences at Noon (or SCANs) are not listed here and can be found at www.itqb.unl.pt/events, together with other scientific events at ITQB.

AVX Seminars

The evolution of cell signalling mechanisms- from cells to society
Rui Malhó, Faculdade de Ciências, Universidade de Lisboa

Molecular clocks timing embryo development
Isabel Palmeirim, Escola de Ciências da Saúde, Univ. Minho

Fullerenes: from photophysical singularities to analytical applications
Mário Nuno Berberan e Santos, IST, Univ. Técnica Lisboa

Surface modification of biomaterials
Maria Helena Gil, Fac. de Ciências e Tecnologia, Univ. de Coimbra

Yeast in stress fermentative environments: integrating the molecular biology with physiological models
Cecília Leão, Escola de Ciências da Saúde, Universidade do Minho

Climate change and sustainable development
Filipe Duarte Santos, Fac. de Ciências Universidade de Lisboa

Role of the heat shock response in misfolding disorders of extracellular deposition
Maria João Saraiva, IBMC – Universidade Porto

New players in skeletogenesis and tissue calcification
Leonor Cancela, Fac. de Ciências e Tecnologia, Univ. do Algarve

Molecular biophysics goes live in biomedicine
Miguel Castanho, Fac. de Medicina, Universidade de Lisboa

How we deal with foreigners
Miguel Che Soares, Instituto Gulbenkian de Ciência

Frontier Leaders Seminars

In search of an ionic liquid effect
Thomas Welton, Imperial College, UK

Hydrothermal vents and the origin of life
William Martin, Dusselforf University, DE

How membrane proteins are inserted into the endoplasmic reticulum
Gunnar von Heijne, Stockholm University, SE

The gut immune response of Drosophila
Bruno Lemaitre, École Politechnique Federale de Lausanne, CH

The chemistry of oxygen sensing in humans
Christopher Schofield, University of Oxford, UK

Pathogens and commensals at mucosal surfaces: the Yin and yang of innate immunity
Philipe Sansonetti, Institut Pasteur, FR

The intriguing interaction of prion protein with nucleic acids and glycosaminoglycans in function and disease
Jerson L. Silva, Universidade Federal do Rio de Janeiro, BR

Interbio Seminars

Friedreich ataxia – From clinics to pathophysiology via genetics
Francesc Palau, CIBER de Enfermedades Raras, CSIC, ES

Metals in alzheimer's disease
Peter Faller, Université Paul Sabatier Toulouse, FR

Other Invited Seminars

The story of Hunchback and the dwarf
Thomas Edwards, University of Leeds, UK

From cyanobacterial hydrogenases to biomodularh2
Paula Tamagnini, IBMC, Universidade Porto, PT

Molecular mechanisms of cadmium detoxification
Elis Eleutherio, UF Rio de Janeiro, BR

Global HIV vaccine research cryorepository
Hagen von Briesen, Fraunhofer-Inst. for Biomedical Engineering, DE

Quality considerations for the production of biopharmaceuticals
Nigel Jenkins, NICB, IE

GroEL: Building on nature's toolbox
Mark Fisher, University of Kansas Medical Center, USA

From a complex phosphoprotein to complex phosphoproteomes: The role of mass spectrometry
Paul Jenö, Biozentrum of the University of Basel, CH

MPSI : Development and application of high throughput methods for structural and functional studies of membrane proteins
Vincent Postis, University of Leeds, UK

Structural biology at the european synchrotron radiation facility
Serge Perez, Head of Research ESRF, FR

Atomic force microscopy - a remarkable technique in supramolecular chemistry and biophysics
David Olea, Instituto de Catalisis y Petroleoquímica, CSIC, Madrid, ES

Innovative molecular biology solutions
Applied Biosystems, ITQB, PT

The link between pneumococcal carbohydrate metabolism and virulence
Hasan Yesilkaya, University of Leicester, UK

Science for the XXI Century
João Caraça, ISEG and FCG, PT

From Biomineralization to Medicine: a translational step
Filipe Natalio, der Johannes Gutenberg-Universität Mainz, DE

The nitrogen cycle in the Archaean; an intricate interplay between enzymatic and abiotic reactions
Wolfgang Nitschke, CNRS Marseille, FR

Solar hydrogen production with an enzyme-nanoparticle hybrid system
Erwin Reisner, The University of Manchester, UK

Multiple evolutionary mechanisms shape plant and algal cell wall composition
Zoë A. Popper, National University, IE

IP for scientists: general concerns
Cristina Faria, Hovione, PT

A huge machine for pumping protons: structural and functional insights into mitochondrial complex I
Ulrich Brandt, Johann Wolfgang Goethe-Univ. Frankfurt am Main, DE

Information-driven modelling of biomolecular complexes
Alexandre M. J. J. Bonvin, Utrecht University, NL

Folding and aggregation of prion proteins
Teresa Pinheiro, University of Warwick, UK

The catalysts of protein synthesis
Anders Liljas, Lund University, SE

The development of structural biology seen through a number of Nobel Prizes
Anders Liljas, Lund University, SE

Arabidopsis S6 Kinase, a cell growth regulator involved in repression of cell proliferation
Rossana Henriques, Rockefeller University, USA

Functions and biogenesis of peroxisomes in humans in relation to peroxisomal disorders
Ronald J.A. Wanders, AMC, University of Amsterdam, NL

Analysing life in the hot lane: Proteomics in the crenarchaeon Sulfolobus solfataricus
Phillip C Wright, University of Sheffield, UK

Analyzing macromolecular structures with native mass spectrometry: Insights to virus structure and assembly
Charlotte Uetrecht, University of Utrecht , NL

Integrated approach to detect biological effects of exposure to Nanoparticles
Susana Cristobal, Linköping University, SE

Membrane proteins, α-helices, & lipid bilayers: Coarse grained md simulations
Mark S.P. Sansom Dept. of Biochemistry, University of Oxford, UK

Live and let Dry: a phylogenetic approach to understanding dehydration tolerance in plants
Melvin Oliver, University of Missouri, USA

Cell fate regulation in the Arabidopsis root
Ana Campilho, IBMC, Universidade do Porto, PT

Scientific Meetings in 2010

Meetings organized by ITQB Researchers

Frontiers in chemical biology
April 12, 2010, ITQB, Oeiras
Cláudio M. Gomes, Jean J. Toulmé, Miguel Teixeira, organizing committee

3rd CERMAX practical course on basic NMR Workshop
14 - 17 June, 2010, CERMAX, ITQB, Oeiras, Portugal
Manolis Matzapetakis, organizer

CCPNMR10 Workshop
Macromolecular NMR assignment with CcpNmr Analysis
31 May - 4 June, IGC, Oeiras, Portugal
Manolis Matzapetakis, co-organizer

International Safewater Workshop
April 14, 2010, Sintra, Portugal
Integrated Drinking Water Treatment Processes
Teresa Crespo, organizer

2010 Proteomics Odyssey toward next decades
October 2010, Estoril, Portugal
4th European Association for Proteomics Meeting
Ana V. Coelho, organizer

European Net. on Viral Vaccine Processes (ENVVP) meeting
October 14 -15, 2010, Frankfurt am Main, Germany
Manuel J. T. Carrondo, organizer

Specific RNA binding proteins and nucleases in mRNA decay
July 2010, USA
International Conference of Federation of American Societies for Experimental Biology-FASEB: Post-Transcriptional Control of Gene Expression: Mechanisms of mRNA Decay 2010 FASEB Summer Research Conference, Carefree Resort, Arizona 11-16
Cecilia M. Arraiano Chairman of Session

Session on "Microbial Ribonucleases" in the Internacional 8th Meeting on Ribonucleases
October 20-22, 2010, Naples, Italy
Cecilia M. Arraiano co-Chairman (with Allen Nicholson)

RECOMB 2010 14th International Conference on Research in Computational Molecular Biology
August 12-15, 2010, Parque das Nações, Lisboa, Portugal
Cecilia M. Arraiano, organizer of Special Panel on "Regulatory RNAs"

Forest Genomics Meeting Eucalyptus meet genomics
ITQB-UNL, 10th December 2010
Pedro Fevereiro, organizer

ITQB PhD Students' Meeting
October 21-22, 2010, ITQB-UNL, Oeiras,Portugal
Catarina Silva, Diana Lousa, Elisa Campos, Filipa Nunes, Helena Deus, Helena Veiga, João M. Damas, Zélia Gouveia, Ana Sanchez , Ligia M. Saraiva, organizing committee

Courses organized by ITQB Researchers

BioCrys 2010 "Fundamentals of Morden Methods in Biocrystallography" FEBS Practical & Lecture Course
9-16 October, 2010, Oeiras, Portugal
Maria Armenia Carrondo organizer BioCrys 2010 with T. Schneider from EMBL- Hamburg.
The local team of organizers included P.M. Matias, C. Frazão, M. Archer, I. Bento, C.M. Romão, and C. McVey

Structure and function from macromolecular crystallography organisation in space and time
June 2010, Erice, Italy
42th course of the International School of Crystallography
Maria Arménia Carrondo was co-Director with Prof. Sir Tom Blundell

Protein folding, misfolding and disease
October 8-10, 2010, Santarém, Portugal
9th Short course of the Short course of the Portuguese Biophysical Society
Manuela M. Pereira, Lígia Martins, Cláudio M. Soares, organizing committee

3rd CERMAX practical course on basic NMR
June 14 - 17, 2010, CERMAX, ITQB, Oeiras, Portugal
Pedro Lamosa, organizer
Helena Matias, Manolis Matzapetakis, Patrick Grooves, organizing committee

CCPNMR10 Workshop
31 May - 4 June, 2010, IGC, Oeiras, Portugal
Macromolecular NMR assignment with CcpNmr Analysis

First RNEM Course on Protein Identification by Mass Spectrometry
27-28 January, 2010, ITQB, Oeiras
Ana V. Coelho, organizer

ITQB Researchers in scientific committees

Cláudio M. Soares
December 15-17, 2010, Porto, Portugal
Scientifc Committee of the Congresso Nacional de Bioquímica

Lígia O. Martins
June 16-18, 2010, Germany,
Oxizymes in Leipzig - 4th European Meeting of OXIZYMES
8th International Congress of Peroxidases to be held in Leipzig,

September 14-15, 2010, Santiago de Compostela, Spain
Oxidative Enzymes as Sustainable Industrial Biocatalysts

October 8-10, 2010, Santarém, Portugal
Protein Folding, Misfolding and Disease
9th Short Course of the Portuguese Biophysical Society in Systems Biology

Claudina Rodrigues-Pousada
Elected for Chairman of the Young Scientist Career of FEBS

Teresa Crespo
July 11-13, 2011, Sydney, NSW, Australia
Programme Committee of the International Conference Micropol & Ecohazard 2010-2011 - the 7th International Water Association specialist conference on assessment and control of micropollutants/hazardous substances in water

Ana V. Coelho
December 2010, Lisbon, Portugal
4th Portuguese Mass Spectrometry Meeting

Manuel J. T. Carrondo
Member, Scientific, Clinigene Network of Excellence

Member, Advisory Board, PBS Biotech (California 2010)

Paula M. Alves
Member Scientific Board, PEACE Protein Expression in Animal Cells Conference

Member Scientific Board, RPP Conference on Recombinant Protein Expression organized by the Section on Microbial Physiology of the European Federation of Biotechnology

Hermínia de Lencastre
Member of Scientific Committee 7th International Symposium on Pneumococci and Pneumococcal Diseases ISPPD, Israel

Raquel Sá-Leão
April 19-23, 2010, Zagreb, Croatia.
Member of the scientific committee of the "3rd ESGEM Practical and Theoretical Course on Molecular Typing Methods for Bacterial Pathogens" organized under the auspices of ESGEM (ESCMID Study Group on Epidemiological Markers) and ESCMID (European Society of Clinical Microbiology and Infectious Diseases).

July 7-8, 2010, Switzerland
Expert Consultant of World Health Organization on "Changing Epidemiology of Pneumococcal Serotypes Following Conjugate Vaccine Introduction", World Health Organization

Cecilia M. Arraiano
October 20-22, 2010, Naples, Italy
8th Meeting on Ribonucleases
Organizers: Profs. Filomena Sica, Claudia De Lorenzo, Antonello Merlino, Elio Pizzo

May 31 - June 2, 2010, Braga, Portugal
XXXV Jornadas Portuguesas de Genética

Helena Santos
September 12-16, 2010, Ponta Delgada, Azores
8th International Congress on Extremophiles, Congress Chair: Helena Santos; Members of the Organizing Committee: Nuno Borges, Pedro Lamosa, Luis Gafeira and Tiago Pais, all from the Cell Physiology & NMR Lab

Permanent Member of the "International Organizing Committee" in the series of conferences "International Congress on Extremophiles"

Manuel Pedro Fevereiro
August 2010, Lisbon, Portugal
Co-convener - Simposium 08 - From The Olive Tree To Olive Oil: New Trends And Future Challenges International Horticulture Congress

Maria Carlota Vaz Patto
April 2010, Antalya, Turkey
was member of the International Steering Committee and Scientific Committee of the joint 5th International Food Legumes Research Conference and 7th European Conference on Grain Legumes

Manuela Chaves
August 2010, Lisbon, Portugal
28th International Horticulture Congress.
(MM Chaves was member of the Scientific and Programme Committee)

Outreach

ITQB has been committed to science outreach since its foundation. Presently the Communication and Science Outreach Office coordinates most of the activities. As an associate member of *Ciência Viva*, ITQB participates in the activities organized by this entity. Moreover, ITQB researchers individually participate in a number of actions that are not listed here.

Major events

ITQB presente na Euroskills
European Skills Competition 2010 includes Science area

Ser cientista: mas afinal o que é isso?
Science and Technology Week : 23, 24 and 25 November

Investigação de Verão
Short training periods periods at ITQB's Labs

Desafio E. Coli: o encontro final
ITQB welcomes participants of Scientific Documentary Contest

A ciência vai a um centro de arte
April 20-25 at Manuel de Brito Art Center

Dia Aberto - um dia a saber a Ciência
An invitation from the researchers for Saturday 27 February

Dia Aberto is the most visible expression of science outreach at ITQB. Once a year, on a Saturday, ITQB researchers transform the whole institute into a major science fair to welcome visitors of all ages. Below is a summary of our visitor's impressions during the 2010 initiative, which was dedicated to biodiversity.

- 1185 visitors
- 70 % came to *Dia Aberto* for the first time in 2010
- 54 % thought that the activities matched their expectations
- 42 % thought that the activities exceeded their expectations
- 97 % felt the event gave a positive idea about science
- 96 % would recomend this visit to their friends

School visits

In 2010, ITQB organized 20 school visits for a total of 489 students, not counting visits by university students or those arranged directly between schools and laboratories. ITQB researchers receive the students in their laboratories (two different labs are always visited). In 2010, 40 laboratories were involved in this initiative. Below is the list of schools that visited ITQB in 2010.

Escola Secundária Damião de Goes, Alenquer
Escola Sec. 3º José Cardoso Pires, Santo António dos Cavaleiros
Escola Secundária Sebastião e Silva, Oeiras
Escola Secundária de Alvide, Cascais
Escola Básica e Secundária Doutor Escola Básica e Secundária Dr. Hernâni Cidade, Redondo
Escola Secundária Fernando Lopes Graça, Parede (x4)
Escola Secundária de S. Lourenço, Portalegre
Colégio João de Barros, Pombal
Escola Secundária Pedro Alexandrino, Póvoa de Santo Adrião (x2)
Escola Secundária Sebastião e Silva, Oeiras
Escola Secundária de Alcochete
Escola Secundária Rafael Bordalo Pinheiro, Caldas da Rainha
Colégio de São Miguel, Fátima

The following labs received students:
Antibiotic Stress and Virulence of Enterococci
Applied and Environmental Mycology
Bacterial Cell Biology
Bacterial Cell Surfaces and Pathogenesis
Bacterial Energy Metabolism
Bacterial Signalling
Biological Energy Transduction
Biomolecular Diagnostics
Cell Bioprocesses
Cell Line Development and Molecular Biotechnology
Cell Signalling in Drosophila
Control of Gene Expression
Disease and Stress Biology
Genomics and Stress
Genomics of Plant Stress (GPlantS)
Glycobiology
IBET - Pilot Unit
Infection Biology
Inorganic Biochemistry and NMR
Membrane Protein Crystallography
Microbial & Enzyme Technology
Microbiology (Analytical Services Unit)
Microbial Development
Microbiology of Man-made Environments
Molecular Genetics
Nutraceuticals and Delivery
Physiology of Environmentally Conditioned Microbiota
Plant Biochemistry
Plant Cell Biology
Plant Cell Biotechnology
Plant Developmental Genetics
Protein Biochemistry, Folding & Stability

Art & Science

Patricia Noronha is a resident artist at ITQB since 2007. Currently with a post-doc fellowship in artistic studies and with the support of the microbiology lab, Patricia works with microorganisms that produce colored natural pigments to create biopaintings. The paintings result from the artist's observation and experimentation with evolving patterns of yeast biofilms. The biopaintings are then obtained by controlling the growth of yeast cells on paper and ensuring the stability of the final work. In 2010, her work appeared at:

"LiveversusStill Biopaintings" prepared for the year of biodiversity, Faculty of Science and Technology, New University of Lisbon, Monte da Caparica (individual exhibition).

"Art after Science" at Robotarium Gallery, Lisbon. Among the participants were Leonel Moura, Eduardo Kac and Susanne Anker (collective exhibition).

Site specific installation "impossible Garden" at *Dia Aberto ITQB* , under the subject biodiversity. It was the first experiment of performing a live "biopainting" with filamentous fungi.

In 2010, Nádia Duval was a resident artist at the lab of colloids, polymers and surfaces in the framework of *Residência* "*Experimentação Arte e Ciência"* by *Ciência Viva* and the *Instituto das Artes.* Her project, SKIN, intends to use simple pigments to develop membranes (or skins) of ink. One of the difficulties with this work is the durability of the skin; the interaction with a chemistry lab, experienced in polymer matrices, aims precisely at overcoming this technical difficulty. In 2010, Nadia presented her work at:

"SKIN"
Project at the National Science Meeting Ciência 2010, Lisboa

"Work in progress"
Base PXO "Homo Virtualis", Clube Literário do Porto
(collective exhibition)

"Estigmas"
Installation at the Palácio Reynolds, Estremoz. Iniciativa BASE PXO, Bienal do Porto Santo (individual exhibition)

Media and social networks

ITQB researchers are available in their areas of expertise for enquiries from journalists and are often contacted to comment or explain science matters of national or international nature, such as Nobel Prize awards or public health related issues.
In addition, researchers actively seek the media to convey important research results to the public at large, by working together with the communication office at ITQB.

Webpage

The ITQB website was re-designed in 2010. While mainly maintaining content organization, the website was made consistent with the new visual identity of ITQB. This also presented the opportunity to add new features to the site, including new resources for researchers.
In 2010, ITQB decided to add social networks to the communication toolbox. The ITQB Facebook page was created in July and the number of fans and fan interactions has steadily risen. Many website accesses are now done via the Facebook page.

Other activities

Other frequent activities of ITQB researchers include: helping students in their assignments (*disciplina de projecto*), as jury members in science outreach competitions, participating in activities organized by other institutions, and making materials available for schools and science outreach activities.

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Knowledge Creation

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+351 214 469 350 | info@itqb.unl.pt | www.itqb.unl.pt

2010 Curiosities

24 % foreign PhD holders

62 % female PhD holders

% female PhD students 74

invited lectures 50

4 M€ in Research Projects

% articles with international teams 52

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