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Cover:
Expression pattern analysis of the 4107 genes of the bacterium Bacillus subtilis in the initial stages of spore differentiation.
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 hosts 64 independent laboratories grouped in five research divisions and consisting of a scientific staff of more than 350 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 at www.itqb.unl.pt
Statistics
Statistics

Research Groups

ITQB hosts 64 research groups distributed by 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 4.1 researchers.

<table>
<thead>
<tr>
<th>Labs (and PhD holders) per division</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>09 (17)</td>
</tr>
<tr>
<td>Biological Chemistry</td>
<td>18 (35)</td>
</tr>
<tr>
<td>Biology</td>
<td>12 (40)</td>
</tr>
<tr>
<td>Plant Sciences</td>
<td>09 (32)</td>
</tr>
<tr>
<td>Technology</td>
<td>16 (39)</td>
</tr>
</tbody>
</table>

Group leaders by gender: 30 male/34 female
Group leaders by nationality: 54 portuguese/10 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 under the Laboratório Associado contract or under the Ciência 2007 and Ciência 2008 initiatives. The majority of the PhD holders is supported through post-doctoral scholarships.

**PhD holders in 2009** 166

<table>
<thead>
<tr>
<th>Permanent Staff</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other institutions</td>
<td>29</td>
</tr>
<tr>
<td>Laboratório Associado</td>
<td>20</td>
</tr>
<tr>
<td>Ciência 2007</td>
<td>19</td>
</tr>
<tr>
<td>Ciência 2008</td>
<td>07</td>
</tr>
<tr>
<td>MIT-Portugal</td>
<td>01</td>
</tr>
<tr>
<td>Post Doctoral Fellows</td>
<td>64</td>
</tr>
</tbody>
</table>

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

**PhD students in 2009** 173
Graduates and undergraduates
Other graduates participate in research projects as grantees (*bolsas de investigação* - BI). Undergraduate students also have the opportunity to start their training in scientific research at ITQB. Some of these students receive scholarships (*bolsas de iniciação à investigação* - BII) from FCT.

<table>
<thead>
<tr>
<th>Other graduates (BI)</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates trainees</td>
<td>47 (15 with BII)</td>
</tr>
</tbody>
</table>

### Graduates and undergraduates in the last five years

<table>
<thead>
<tr>
<th>Year</th>
<th>Graduates</th>
<th>Trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>2007</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>2008</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>2009</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

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 2009)** 92*

- 71 projects *Fundação para a Ciência e a Tecnologia*
- 14 projects European Commission
- 3 projects European Commission (individual grants)
- 1 project *Fundação Calouste Gulbenkian*
- 1 project NIH (through Rockefeller University)
- 1 project European Economic Area and Norway Grants
- 1 project as Subcontracting Party (Georgia Institute of Technology)

### Publications in peer-review journals in 2009
196
(see full list in the Research Output Section)

### Publications in peer-review journals in the last five years

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>194</td>
</tr>
<tr>
<td>2006</td>
<td>205</td>
</tr>
<tr>
<td>2007</td>
<td>191</td>
</tr>
<tr>
<td>2008</td>
<td>186</td>
</tr>
<tr>
<td>2009</td>
<td>196</td>
</tr>
</tbody>
</table>

*In 2009, ITQB researchers were awarded 51 new research projects (41% success rate) by Fundação para a Ciência e a Tecnologia. Officially, these projects started in 2010 and are therefore not accounted here.*
Advanced Education

Total number of registered PhD students 276
including 103 PhD students from IGC (as of 31 December 2009)

First year PhD students at ITQB in 2009 28

PhD theses awarded in 2009 20
(10 in Biology; 6 in Biochemistry, 3 in Technological and Engineering Sciences; 1 in Chemistry). This number includes 2 PhD students from other institutions.

The first edition of the new ITQB PhD Program, re-structured in accordance with the rules of the Bologna Process, took place in 2009. Twenty-four PhD students were enrolled in the PhD program.

Masters Degree Programme

ITQB is involved in the Masters Degree in Medical Microbiology, a collaborative Masters Course from the Universidade Nova de Lisboa in conjunction with the Instituto de Higiene e Medicina Tropical, the Faculdade de Ciências Médicas and the Faculdade de Ciências e Tecnologia. In 2009, four master students defended their dissertation theses at ITQB.
Budget

The overall budget of ITQB for 2009 was circa 12.7 M€ distributed as follows:

- State Budget: 29%
- Laboratório Associado: 21%
- Ciência Programme: 19%
- Research Projects: 20%
- Others: 11%

ITQB has two main funding sources, the state budget, attributed by the Ministry of Science, Technology and Higher Education, 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 initiative, 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. Individual scholarships (bolsas) for PhD and post-doc students are not included in this statistics.
Highlights
The 196 papers published in ISI journals during 2009 span different areas of chemistry and biology; these papers reflect the high-quality research work at ITQB and contribute to the over 1,600 papers published in the last 10 years with a corresponding number of citations of 23,197 (h-index for this period is 57).

Adding to the 92 running research projects, the researchers’ success in securing funds for their research was visible in the 41% approval rate in the 2008 FCT call; an ITQB project on biofuel cells was one of the four selected by the MIT-Portugal Program in the bioengineering focus area; a project involving ITQB/IBET researchers for preserving Portuguese flora was among the three projects selected for funding through the Biodiversity Fund from EDP.

ITQB researchers received many distinctions for their work presented at international scientific meetings. On a more individual note, Claudina Rodrigues Pousada was honoured at the FEBS Congress and was recognized with the Almofariz Award by the pharmaceutical sector; Helena Santos and Cecília Arraiano became Members of the Portuguese Academy of Sciences.

Some of the research highlights in 2009 are listed below.
For details go to http://www.itqb.unl.pt/about-us/highlights-2009

A Swiss army knife for RNA degradation
Specialized regions within the exosome uncovered by researchers

Looking critically at the landscape
Energy landscape on the cover of Journal of Physical Chemistry B

Cryopreserving cells
Novel strategy made cover of Tissue Engineering
Predicting chemical reactions
A new method devised for hydrocarbons

Cleaning-up dyes in the environment
Enzyme biotechnology as an alternative process

Making virtual seem more real
New method for molecular dynamics simulation developed

Maize seeds make researchers start from scratch
When mass spectrometry seems to fail
Sergeant K. et al. (2009) J. Proteome Res., 8 (6), pp 3182–3190

Aromatic moments determine solubility in ionic liquids
Researchers propose new rule for predicting liquid-liquid solubility

Generating new catalysts
A new method to functionalize N-heterocyclic carbenes

A snapshot of sulfur bioenergetics
X-ray structure and biochemistry of a sulfide:quinone oxido-reductase

Haem biosynthesis in anaerobic organisms
ITQB researchers discover alternative pathway

Understanding the role of vitamin B2 in lipid metabolism diseases
ITQB researchers look into mitochondrial protein folding

Stepping forward in gene therapy
New strategies in downstream processing of viral vectors

Taking ionic liquids to the next level at ITQB
When the fungal opinion on green chemistry matters

What nanotechnology could do for DNA
New nanotool developed at ITQB

Strategies in animal cell culture
Towards better methods in drug screening

The importance of a bond
A method to estimate the strength of a carbon-carbon double bond

The Making of a “Super”-Enzyme
One single aminoacid change in RNase II drastically improves its catalysis

Facts and fiction of genetically engineered food
Review paper in Trends in Biotechnology

Killer or defender of S. aureus: antagonistic behaviour of a single enzyme
Bifunctional enzyme with nitroreductase and GSNO reductase activity

Journal of Bacteriology features enzyme structure
New decameric arrangement described by ITQB researchers
Prizes and Awards

Individual distinctions

**Cecília Arraiano**
Elected corresponding member of the *Academia de Ciências de Lisboa*. Class Sciences, Section Biological Sciences.


Elected by the FEBS (Federation of European Biochemical Societies) Council as a member of the FEBS Advanced Course Committee (2009-2012).

**Helena Santos**
Elected corresponding member of the *Academia de Ciências de Lisboa*.

**Claudina Rodrigues-Pousada**
Awarded with the “Diplôme d’honneur” given by the Federation of the European of Biochemical Societies

Awarded with the “Prémio Almofariz, Figura do Ano” given by the *Revista Farmácia-Distribuição*.

**Luís Jaime Mota**
European Society of Clinical Microbiology and Infectious Diseases Research Grant “Development of *Salmonella* as a surrogate system to study the function of virulence proteins of *Chlamydia trachomatis*” (3 years).

Research distinctions

*Fundo EDP Biodiversidade 2009* “*Conservação e Valorização da Flora Endémica Ameaçada em Portugal*” - one of the 3 winning projects. Disease and Stress Biology Lab/ Forest Biotech Lab (in collaboration with *Faculdade de Farmácia - Universidade Coimbra and Jardim Botânico da Universidade de Lisboa*).

In scientific meetings


Best Poster Award (3rd prize): Lipid Metabolism as a Basis for Improved Manufacturing of Complex Bioproducts the Casa of Retroviral Vectors. Rodrigues AF, Carmo M, Amaral AI, Alves PM, Coroadinha AS. 21th European Society for Animal Cell Technology (ESACT) Meeting, Dublin, Irlanda.


Editorial Boards in 2009

ITQB Researchers as Members of Editorial Boards

Carlos Romão
Member of the Editorial Board of European Journal of Inorganic Chemistry.

Catarina Duarte

Cecília Arraiano
Editor of FEMS Microbiological Reviews
Editor of WIREs-RNA (Wiley and Blackwell Reviews on RNA).

Claudina Rodrigues-Pousada
Member of the Editorial Board of the journal Yeast and Comptes Rendus de l'Académie des Sciences, Académie des Sciences (Institut de France - Paris).

Cláudio Soares
Associate Editor of Journal of Biomedicine and Biotechnology.

Dirk-Jan Scheffers
Member of the Editorial Advisory Board of Molecular Microbiology.

Eurico de Melo
Member of the Editorial Advisory Board Biophysical Chemistry.

Helena Santos
Member of the Editorial Board of the journal “Extremophiles” (2001-p).
Managing Editor and Reviews Editor of “Extremophiles” (2008-p).

Herminia de Lencastre
Member of the Editorial Board of Microbial Drug Resistance.

Luís Paulo N. Rebelo

Manuel Carrondo
Associate Editor of the Journal of Biotechnology.
Member of the Editorial Board of Biotechnology and Bioengineering.
Member of the Editorial Board of Biotechnology Letters.
Member of the Editorial Board of Current Gene Therapy.

Manuela Chaves
Associate Editor of Functional Plant Biology (2008-p).

Margarida Oliveira
Editor of Springer Journal Plant Cell Tissue and Organ Culture.

Maria Arménia Carrondo
Editor of Journal of Biological Inorganic Chemistry.

Paula Alves
Member of the Editorial Board of BMC Biotechnology (2009-p).

Ricardo Ferreira
Member of the Editorial Board of Journal of Berry Research (2009-p).
What is true for E. coli is true for an elephant.
Jacques Monod (1900 - 1976)

Science and Society
Main activities in 2009

ITQB has a Science Communication Office designed to bring researchers and their research closer to the public. While placing emphasis on young students, the outreach activities aim to promote the appreciation and understanding of science across all sectors of society. See below for some of the activities in 2009. More information can be found at www.itqb.unl.pt/science-and-society.

Throughout the school year, almost 500 students (11th and 12th grade) from 17 schools visited ITQB laboratories; visits were also organized for university students either within a class, in small groups, or individually. Short summer training periods for high school students were held at ITQB under the Ciência Viva initiative: eight students (including two coming from Spain) were included in the lab’s teams to experience the everyday life of a researcher.

The most illustrative outreach activity is the Annual Open Day, a day for families to visit the institute, meet the researchers, and contact with the scientific activities. Over 1,000 visitors came to ITQB in 2009 for a journey into evolution: celebrating Darwin’s year, researchers showed how the concepts of evolution and natural selection have wide implication in biology and are present in current research projects. Visitors could participate in experiments, talk to researchers, learn about the role of computers in the life sciences, and visit laboratories, the X-ray facility, or the NMR centre.

In May, the winners of the drawing/writing competition “if I was a microbe” (held in 2008) were invited to spend one Saturday at the Microbiology Laboratory at ITQB. With the support of the local city council, all children took home a new microscope to continue their exploration into the microworld.

In September, the Laboratório Associado de Oeiras was involved in the Researcher’s Night. This national wide project, promoted by the European Commission, was coordinated by IGC and involved 10 partner institutions to promote activities in four different cities. ITQB coordinated the science outreach activities in Lisbon. In parallel with science displays and experiments, theatre performances by the researcher’s themselves were used as a vehicle to communicate both science and scientist’s dilemmas.

During the National Week for Science & Technology, held in November, students were invited to talk to ITQB researchers about research as a career in a series of one to one interviews with ITQB researchers. Both students and researchers found this activity very positive and useful, making this one of the most successful S&T weeks at ITQB.

ITQB continues to explore art as a vehicle to stimulate interest in science. Patrícia Noronha, resident artist since 2007, obtained a post-doc fellowship for artistic studies to develop a new project, where fungi and yeast are used as biopigments in watercolour paintings. In May, Patrícia Noronha also conducted a practical Art & Science workshop for 12th grade students (from both arts and science subdivisions). ITQB participated again in the Ciência Viva’s initiative for artistic residences in the laboratories and received several applications; Nadia Duval with the project Skin is now developing her project in the Laboratory of Colloids, Polymers and Surfaces.

ITQB seeks to keep the public informed and up-to-date on the institute’s main achievements, both through the institute’s webpage and by issuing press releases on major scientific breakthroughs or other relevant activities.
Organization of the Institute
Organization of the Institute
Institute Council

Francisco Luís Murteira Nabo, Galp Energia - President
Júlio Domingos Pedrosa da Luz de Jesus, Univ. de Aveiro
Peter Villax, Hovione
Carlos José Rodrigues Crispim Romão, ITQB
Maria Helena Dias dos Santos, ITQB
Adriano José Alves de Oliveira Henriques, ITQB
Cláudio Manuel Simões Loureiro Nunes Soares, ITQB
Júlia Carvalho Costa, ITQB
Maria Margarida Moutinho Girão de Oliveira, ITQB
Sérgio Joaquim Raposo Filipe, ITQB
João Miguel Marques Martins Damas (student) ITQB
Fátima Madeira (Secretariat)

Scientific Advisory Board

Charles L. Cooney
Massachusetts Institute of Technology, USA

Peter J. Sadler
University of Warwick, UK

Staffan J. Normark
Karolinska Institutet, Sweden

Joel L. Sussman
Weizmann Institute of Science, Israel

Paul Christou
Universitat de Lleida, Spain

Director and Vice-Director

Director
José Artur Martinho Simões, Professor

Vice-Director
Luís Paulo N. Rebelo, Professor

Secretariat to the Direction
Rosina Faruk Gadit
Organization of the Institute

**Scientific Council**

- **Director**
  - José Artur Martinho Simões

- **Chemistry**
  - Rita Delgado - Division Coordinator
  - Carlos Crispim Romão (Olga Iranzo Casanova)

- **Biological Chemistry**
  - Cláudio M. Soares - Division Coordinator
  - Maria Arménia Carrondo (Inês Antunes Cardoso Pereira)

- **Biology**
  - Adriano Oliveira Henriques - Division Coordinator
  - Maria Helena Santos (Sérgio Raposo Filipe)

- **Plant Sciences**
  - Cândido Pinto Ricardo - Division Coordinator
  - Manuela Chaves (Nelson Saibo)

- **Technology**
  - Luís Paulo N. Rebelo - Division Coordinator
  - Manuel José Teixeira Carrondo (Cristina Silva Pereira)

  - Rosina Faruk Gadit (Secretariat)

**Pedagogical Council**

- José Artur Martinho Simões - President

- Adriano Oliveira Henriques

- Cláudio M. Soares

- João Miguel Damas (student)

- Catarina Isabel Silva (student)

- Ana Maria Portocarrero (Secretariat)

**Communication Office**

- Ana M. Sanchez

- Luís Morgado

- Cláudia Lopes Pinheiro

**Ombudsperson**

- Manuela Chaves
Management Council

José Artur Martinho Simões (Director)

Luís Paulo N. Rebelo (Vice-Director)

Margarida Senna-Martinez (Administrator)

Fernando Jorge Tavares (Financial and property management)

Administrator

Margarida Senna-Martinez
Management Support

Administration and Finance
Head: Fernando Jorge Tavares
Accounting
Ana Cristina Afonso Silva
Mónica Adriano Vieira
Isabel Mestre
Nuno Lopes
Sónia Ermida
Treasury Section
Ana Freire
Anabela Bernardo Costa
Stores
Ana Soares Santos
Bruno Gouveia
Carlos Martins
João Rodrigues
Ricardo Pinto

R&D Planning and Management
Head: Maria de Lurdes Conceição
Cristina Amaral
Cristina Lopes
Isabel Murta
Sandra Marina Martins

Science Manager
Alexandra Veiga

Human Resources
Head: Maria Cristina Pinto
Ana Luísa Cruz
Goretti Rocha
Helena Cordeiro Rodrigues
Maria Madalena Pereira

Mailing and Archive
Artur Freitas

Health and Safety
Helena Matias, Chairman
José Artur Martins Simões, Director
Cristina Lopes, Secretary
1st Floor and Workshop & Maintenance / Henrique Nunes, (Alexandre Maia)
2nd Floor / Fernando Tavares (Nuno Lopes)
3rd Floor / Inês Cardoso Pereira (Cláudio 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 Araújo (Adriano Henriques)
Biological Hazards ITQB I / Rosário 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
Chemistry Division

Bioinorganic Chemistry and Peptide Design

**Olga Irango**, Investigador Auxiliar
Marco Filipe Cerqueira de Araújo  
Ana Filipa Pereira Fragoso  
Joana Isabel Sobral Romão  
BI

Bioorganic Chemistry

**Rita Ventura**, Investigador Auxiliar
Eva Correia Lourenço  
Osvaldo Santiago Ascenso  
Ana Filipa Pereira Nunes  
Rafel de Santana Nues  
Carla Sofia Pedro Ramos  
PhD Student  
BI

Colloids Polymers & Surfaces

**António Lopes**, Professor Associado U. Lusófona
João Ricardo M. Guerra Marques Cortez  
Carla Teresa Ribeiro Antunes  
José Filipe da Silva Lapas Almeida  
Joana Margarida Franco Dantas  
Cátia Filipa Medina Bandeiras  
Investigador Auxiliar  
PhD Student

Coordination and Supramolecular Chemistry

**Rita Delgado**, Professor Associado com Agregação IST
Nicolas Christian Sylvain Bernier  
Luís Miguel Barroso Pereira Lima  
Pedro Miguel Veríssimo Mateus  
Catarina Alexandra Veríssimo Esteves  
Jorge Miguel Martins Santos  
Post Doc  
PhD Student  
BI  
BII
Homogeneous Catalysis

Beatriz Royo Cantabrana, Investigador Auxiliar
Patrícia Matias Reis Francisco
Veera Venkata Krishna Mohan Kandepi
André Filipe Pontes da Costa
José Angel Brito
João Martinho Silva Ramalho Cardoso
João de Carvalho Mesquita Mexia

Organometallic Chemistry

Carlos C. Romão, Professor Catedrático
Jan Harry Andersson
Gonçalo José Lopes Bernandes
Lukas Adrian Kromer
João Daniel Silva Seixas
Maria Carlota Veiga de Macedo
Ana Sofia Gorgulho Gonçalves
Ana Rita Sarzedas Marques Pina
Nuno Miguel Penacho Pereira
Ana Filipa Pinteus da Cruz
Walter Anton Blattler
Ana Margarida Lopes Gonçalves
Vasco Madeira Crispim Romão
* Alma

Micro-Heterogeneous Systems

Eurico de Melo, Professor Auxiliar IST
Winchil Luís Cláudio Vaz
Susete Garcia Soares Beirão
Maria Helena Lopes Lameiro
Rute Cristina Martins Silveira Mesquita
Sofia Cristina Leite de Souza
Joana Rita Ripado Valério

Organic Synthesis

Christopher Maycock, Professor Associado FCUL
Ana Sofia da Cunha Miguel
Paula Alexandra Carvalho Rodrigues
Rita Isabel Lourenço da Silva Lopes
Ana Filipa Bilé Silva
Saúl Alves Graça da Silva

Single Molecule Processes

Yann Astier, Investigador Auxiliar
João Carlos de Sá Nogueira Sousa Dias
Clelia Nelson
Elisa Campos
Malgorzata Magoch
Katharina Hild

Post Doc
Post Doc
PhD Student
PhD Student
PhD Student
BII
BII
PhD Student
PhD Student
PhD Student
PhD Student
BII
BII
PhD Student
PhD Student
BII
BII
Bacterial Energy Metabolism

Inês Cardoso Pereira, Investigador Auxiliar
Sofia Isabel Marques da Silva
Sofia Cristina dos Santos Venceslau
Tânia Pais de Oliveira (cosup. Margarida Archer)
Fábio de Oliveira Morais e Silva (cosup. Claudina Pousada)
Ana Raquel Martinho Ramos
Marta Franco Coimbra Marques (cosup. Pedro Matias)
Daniela Cristina Antunes Matos
Rolf Reiling
PhD Student
PhD Student
PhD Student
BI
BI
BI
Trainee

Metalloproteins and Bioenergetics Unit

Biological Energy Transduction

Manuela M. Pereira, Investigador Auxiliar
Ana Paula Batista
Filipa Lima Sousa
Patrícia Neto Refojo
Ana Teresa Bernardo
Lara Paulo
Carolina Julio
Rute Farinhoto
PhD Student
PhD Student
PhD Student
BI
BI
Project Student
Project Student

Biomolecular NMR

Manolis Matzapetakis, Investigador Auxiliar
Luís Carlos da Cruz Magalhães
Fábio Mira Rocha Sabino
Master Student
BI

Genomics and Stress

**Claudina Rodrigues-Pousada, Professor Catedrático Convidado**

Tracy Laura Nevitt Gonçalves
Regina Andrade Menezes
Catarina Isabel Ribeiro Pimentel
Catarina Sá Almeida Amaral
Fábio de Oliveira Morais e Silva (cosup. Inês Pereira)
Liliana Sofia Batista Nascimento
Joana Alves Ropio
Ana Rita Ladeira Courelas da Silva
Cristina Maria Teixeira Vicente
Ana Catarina Varela Raposo
Mário Rui da Ribeira Vicente
Ana Filipa Nunes Leitão Alegre

Macromolecular Crystallography Unit

**Portuguese**

**Pedro Manuel Marques Matias, Investigador Principal**

Susana Margarida Pires Gonçalves
Tiago Bandeiras (colab. Maria Arménia Carrondo)
Ana Maria da Silva Esteves (colab. Helena Santos)
Marta Franco Coimbra Marques (cosup. Inês Pereira)

**PhD Students**

- Pedro Manuel Marques Matias

**Investigador Auxiliar**

- Tiago Bandeiras
- Ana Maria da Silva Esteves
- Marta Franco Coimbra Marques

**Post Docs**

- Pedro Manuel Marques Matias

**Master Students**

- Tiago Bandeiras
- Ana Maria da Silva Esteves
- Marta Franco Coimbra Marques

**Trainees**

- Tiago Bandeiras
- Ana Maria da Silva Esteves
- Marta Franco Coimbra Marques

**Invited Researcher**

- Ana Margarida Nunes Portugal Carvalho Melo

**Inorganic Biochemistry and NMR**

**Ricardo Saraiva L. Oliveira Louro, Investigador Auxiliar**

Catarina Morais Vaz Paquete
Bruno Miguel Oliveira Maia da Fonseca
Ivo Miguel Henrique Saraiva
Maria Alexandra Alves
Eduardo Paulo de Oliveira Lopes Calçada

**PhD Students**

- Ricardo Saraiva L. Oliveira Louro

**Master Students**

- Ricardo Saraiva L. Oliveira Louro

**Trainees**

- Ricardo Saraiva L. Oliveira Louro

**Invited Researcher**

- Ana Margarida Nunes Portugal Carvalho Melo

**Macromolecular Crystallography Unit**

**Membrane Protein Crystallography**

**Margarida Archer Frazão, Investigador Auxiliar**

Miguel Pedro Januário Pessanha
José Artur Alves de Brito
Tânia Pais de Oliveira (cosup. Inês Cardoso Pereira)
Przemyslaw Nogly
Ana Lúcia Rebelo do Rosário

**Metalloproteins and Bioenergetics Unit**

**Metalloenzymes and Molecular Bioenergetics**

**Miguel Teixeira, Professor Catedrático**

Ana Margarida Nunes Portugal Carvalho Melo
Célia Romão (colab. Maria Arménia Carrondo)
Manuela Marques Pereira
João Filipe Bogalho Vicente
Ana Filipa Carapinha Pinto
Pedro Miguel Ferreira Assis de Sousa
Fabrizio Testa
Liliana Carreira Pinto
Sandra Isabel dos Santos (colab. Maria Arménia Carrondo)
Gabriela Henriques (colab. Maria Arménia Carrondo)
Organization of the Institute

**Microbial & Enzyme Technology**

**Lígia O. Martins, Investigador Auxiliar Convidado**

Debjani Dutta
Vânia Sofia Brissos
Zhenjia Chen
André João Tavares Fernandes
Paulo Jorge Rego Durão
Tânia Isabel Soares Rosado
Sónia Alexandra Gonçalves Mendes
Rita Matos de Palma Catarino
Diogo Migule da Costa Pereira

**Molecular Interactions and NMR**

**Patrick Groves, Investigador Auxiliar**

Malgorzata Palczewska-Groves

**Molecular Simulation**

**António Baptista, Investigador Auxiliar**

Sara Isabel Rasteiro Campos
Luís Carlos Santos Filipe
Pedro Rafael Silva Álvaro Magalhães

**Mössbauer Spectroscopy**

**Filipe Tiago de Oliveira, Professor Auxiliar FCT-UNL**

**Protein Biochemistry Folding & Stability**

**Cláudio M. Gomes, Investigador Auxiliar**

Sónia Cristina Alves Dickson Leal Solano
Ema Luis Pereira Gomes Alves
Ana Raquel Viegas Correia
Bárbara Joana de Almeida Henriques
Vesna Prosinecki
Hugo Miguel Raposo Correia Botelho
Daniela Filipa Dias Isidoro
Ana Margarida Lopes Fiadeiro
Carolina Emanuel Carreira Gomes Jardim
Sofia Baptista de Carvalho

**Molecular Genetics of Microbial Resistance**

**Lígia Saraiva, Investigador Principal**

Marta Sofia Guedes de Campos Justino
Susana André Lima Lobo
Lígia Isabel Santos Nobre
Vera Lúcia Faria Viola Gonçalves
Joana Morais Baptista
Ana Filipa Nogueira Tavares
Mafalda Cristina de Oliveira Figueiredo
Mafalda Maria Teles de Barros
Ana Filipa Carvalho Marques Dias

**Post Doc**

**PhD Student**

**Trainee**

**Trainee**

**Post Doc**

**PhD Student**

**Trainee**

**Trainee**

**Invited Researcher**

**Post Doc**

**PhD Student**

**Trainee**

**Trainee**

**Post Doc**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**Post Doc**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**

**PhD Student**
Protein Modelling

Cláudio Soares, Professor Associado
Bruno Lourenço da Silva Victor
Ana Sofia Fernandes de Oliveira
Diana Andreia Pereira Lousa
João Miguel Marques Martins Damas
Luís Manuel Pinto Pereira
Carla Baltazar

Raman Spectroscopy

Smilja Todorovic, Investigador Auxiliar
Zélia Licínia Ferreira Gouveia
José Gabriel Alves Martins

Macromolecular Crystallography Unit
Structural Biology

Carlos Maria Franco Frazão, Investigador Principal
Joana Raquel Morgado Rocha
Patrícia Alexandra Teixeira Borges

Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
BI
BI
PhD Student
BI

Macromolecular Crystallography Unit
Structural Genomics

Maria Arménia Carrondo, Professor Catedrático
Isabel Maria Travassos Almeida de Jesus Bento
Colin Edward McVey
Célia Romão (colab. Miguel Teixeira)
Tiago Bandeiras (colab. Pedro Matias)
Ricardo Emanuel Sirgado Miranda Coelho
Catarina Isabel Simões Pires da Silva
Tânia Isabel P. da Silva Madeira (colab. Vitória S. Romão)
Ana Teresa da Silva Gonçalves
Bruno Manuel C. Gonçalves Correia
Sandra Isabel dos Santos (colab. Miguel Teixeira)
Joana Isabel Madeira Vaz
Gabriela Henriques (colab. Miguel Teixeira)
João da Fonseca Francisco (colab. Vitória S. Romão)

Investigador Auxiliar
Investigador Auxiliar
Investigador Auxiliar
Investigador Auxiliar
Investigador Auxiliar
Technician
PhD Student
Master Student
BI
BI
BI
BI
Trainee
Biology

Bacterial Cell Biology
Maríana Pinho, Investigador Auxiliar
Patrícia Reed
Ana Maria Rodrigues Jorge
Helena Maria Pinto Veiga
Pedro Matos Pereira
João Miguel da Silva Queirogo Monteiro
Ana Domingas Sousa Paraíso Tavares Manso
Sara Botão Alves Serradas Duarte
Vanessa Correia
Andréia Filipa Campos Tavares

Post Doc
PhD Student
PhD Student
BI
BI
BI
BI

Bacterial Cell Surfaces and Pathogenesis
Sérgio Filipe, Investigador Auxiliar
James Yates
Mafalda Soeiro Xavier Henriques
Magda Luciana Dias Pereira Atlântico
Filipa Baltazar da Costa Vaz
Renata Isabel Lino dos Santos
Tatiana Justo Machado Rodrigues

Post Doc
PhD Student
PhD Student
BI
BII
Master Student

Bacterial Membrane Proteomics
Dirk-Jan Scheffers, Investigador Auxiliar
Rolf Klaus Bredemeier
Inês Filipa Fernandes Oliveira
Joana Cristina da Silva Sales Dias

BI
BI
BII
**Bacterial Signaling**

**Karina Xavier**, *Investigador Auxiliar*
- Michal Bejerano-Sagie - IGC
- Catarina S. Pereira - IGC
- Rita Valente - IGC
- Andreia Correia - IGC
- Ana Rita Santos - IGC
- Osvaldo Ascenso (colab. Rita Ventura)
- Bruno Afonso - IGC
- Daniel Marques - IGC

**Cell Signaling in Drosophila**

**Pedro Domingos**, *Investigador Auxiliar*
- Maria de Fátima Afonso Cairrão
- Vanya Ivanova Rasheva
- Dina Coelho
- Gonçalo Manuel Pinho Ribeiro de Oliveira Poças
- Tânia Isabel Paixão da Silva Madeira
- Joana Mafalda Diogo Portela

**Control of Gene Expression**

**Cecília Araújo**, *Investigador Principal com Agregação*
- Sandra Cristina de Oliveira Viegas
- Susana Margarida Lopes Martins Domingues
- José Eduardo Marques Andrade
- Michal Malecki
- Ana Filipa de Melo Tadeu Pereira dos Reis
- Inês de Jesus de Almeida e Silva
- Inês Gabriel e Silva Batista e Guinote
- Rute Margarida Gonçalves Matos
- Vânia Sofia Fidalgo Pobre
- Ricardo António Neves Moreira
- Ana Margarida Teixeira Saramago
- Andreia Aires

**Glycobiology**

**Júlia Costa**, *Investigador Principal*
- Ricardo Jorge Martins Gouveia
- Catarina Heitor Gomes
- Cristina Isabel Caniço Escrævente
- Eda Rita Gomes Soares Machado
- Patrícia Alexandra de Sousa Barros
- Rita Barreto Duarte Carrilho

**Cell Physiology and NMR**

**Helena Santos**, *Professor Catedrático*
- Maria Teresa Nunes Mangas Catarino
- Nuno Miguel Formiga Borges
- Pedro Miguel Lamosa António
- Luís Maria Figueiredo M. Lopes Fonseca
- Luís Pedro Gafeira Gonçalves
- Carla Alexandre Duarte Jorge
- Marta Viseu Rodrigues
- Tiago Vasconcelos Duarte Moreira Pais
- Pedro Oliveira Quintas
- Ana Lúcia Serafim Carvalho (cosup. Ana Rute Neves)
- Rute Almeida Ferreira Castro (cosup. Ana Rute Neves)
- Ana Isabel Canas Ferreira Mingote
- Carla Patrícia da Silva Almeida
- Cristiana da Silva Faria
- Dusica Rados (cosup. Ana Rute Neves)
- Ana Maria da Silva Esteves (colab. Pedro Matias)

**Professor Auxiliar**

**Investigador Auxiliar**
- Post Doc
- PhD student
- PhD Student
- BI
- Master Student

**Trainee**
- PhD Student
- BI
- BII
- BIII
Infection Biology

Luís Jaime Mota, Investigador Auxiliar
Maria Sarmento de Matos Paiva Raposo da Cunha
Lia Dora David Domingues
Filipe Manuel Baela da Silva Almeida
Sara Raquel Vilela Pais
Rui Pedro Marcos Mauricio

PhD Student
PhD Student
Master Student
Master Student

Microbial Genetics

Isabel Sá Nogueira, Prof. Associado FCT-UNL
Maria Isabel Lopes Correia
Lia Raquel Marques Godinho
Mário José Rodrigues Ferreira

PhD Student
Master Student
Master Student

Lactic Acid Bacteria & In Vivo NMR

Ana Rute Ramos Neves, Investigador Auxiliar
Paula Cristina Trindade Lima Gaspar
Ana Lúcia Serafim Carvalho (cosup. Helena Santos)
Sandra Costa Carvalho
Rute Almeida Ferreira Castro (cosup. Helena Santos)
Ana Laura Machado dos Santos Seara Paixão
Teresa Maio

Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
Master Student

Molecular Genetics

Herminia de Lencastre, Professor Catedrático
Ana Madalena de Drummond Ludovice
Maria Leopoldina Amorim Miragaia Ryder
Rosario Mato Labajos
Raquel de Sá Leão Domingues da Silva
Susana Maria Lavado de Oliveira Gardete
Rita Gonçalves Sobral Almeida
Catarina Isabel Catarino Milheirico
Nuno Alexandre Gomes Faria
Ana Lopes Tavares
Nelson Emanuel da Silva Frazão
Sónia das Neves Nicolau Nunes Leitão
Teresa Carla de Almeida Figueiredo
Teresa Margarida Gomes da Conceição
Alexandra Sofia Oliveira Simões
Maria Inês Ramos Grilo
Bruno Guerra
Carina Valente
Andre Velez
Ons Bouchami
Débora Tavares
Joana Rita Gonçalves Araújo Rolo
Raquel Portela

Professor Auxiliar
Investigador Auxiliar
Investigador Auxiliar
Investigador Auxiliar
Post Doc
Post Doc
Post Doc
Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
BI
BI
BI
BI
Visiting PhD Student
Master Student
Master Student
Master Student

Microbial Development

Adriano Henriques, Professor Associado
Mónica Paula Fernandes Serrano Miranda
Teresa Parente Madureira Vasconcelos Costa
Tiago Joel Vultos Santos
Catarina Alexandra Gonçalves Fernandes
Cláudia Alexandra dos Reis Serra
Filipa Andreia Portugal Nunes
Maria de Fátima Cardoso Pereira
Maria Luísa Gouveia e Freitas Córte
Carla Esteves
Pedro Rodrigues
Renato da Cunha Alves
Joana Rita Vicente Lopes
Carolina Piçarra Cassona

Post Doc
Post Doc
Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
Master Student
Master Student
BI
BI
BI

Joana Cristina Pedro Rodrigues

BI
Research
Chemistry
Biological Chemistry
Biology
Plant Sciences
Technology

Plant Sciences

Disease and Stress Biology

**Ricardo Boavida Ferreira, Professor Catedrático ISA-UTL**

- Ana Cristina Ribeiro
- Maria Cláudia Godinho Nunes Santos
- Damiano Vesentini
- José da Costa Nunes
- Sara Alexandra Monteiro
- Lucélia Rodrigues Tavares
- Paula Cristina Branco Cabrita Cunha
- Alexandre Filipe Guerreiro Borges
- Rui Carlos Soares Pimpão
- Vanessa Alexandra Falcão Borrego
- Sofia Isabel Almeida Fortalezas
- Stella Tataiana Liahuca de Esteves
- Meenu Tyagi
- Diana Leonor Constantino Macedo

Invited Researcher
Post Doc
Post Doc
Post Doc
Post Doc
PhD Student
PhD Student
BI
BI
BI
Trainee
Trainee

Forest Biotech

**Célia Miguel, Investigador Auxiliar**

- Liliana Maria Bota Marum
- Andreia Lúcia Campos dos Santos Ferreira Miguel
- Ana Filipa Gonçalves Milhinhos
- Marta Andreia Horta Simões
- Marta Sofia Morgado dos Santos Madeira
- Ana Maria Vieira Oliveira

Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
BI
Organization of the Institute

Plant Biochemistry

Cândido Pinto Ricardo, Professor Catedrático Jubilado ISA-UTL
Carla Maria Alexandre Pinheiro
José António Pires Passarinho
Ana Isabel Faria Ribeiro
Ana Sofia Correia Fortunato
Marta Alexandra Marques Alves
Isa Catarina Monteiro Brás Ribeiro

Investigator Auxiliar
Investigator INRB
Invest. Auxiliar IICT
Post Doc
PhD Student
BI

Plant Cell Biology

Rita Abranches, Investigador Auxiliar
Nuno Duarte Caixinha Geraldo
Ana Sofia de Carvalho Paiva Fernandes Pires
Stefanie Nunes Rosa
Sónia Marisa Castanheira Dias
Cláudio Miguel Letras da Silva Ferreira

Post Doc
Post Doc
PhD Student
Master Student
Trainee

Plant Cell Biotechnology

Pedro Fevereiro, Professor Auxiliar FCUL com Agregação ITQB
Maria Carlota Morais Cunha Vaz Patto
Jorge Almiro Caldeira Pinto Paiva
Susana de Sousa Araújo
Inês Maria Silva Almeida Chaves
Susana Maria Sousa da Silva Neves
Helena Maria Pereira Garcês
Maria Margarida Rocheta (collab. ISA)
Rita de Sousa Caré
Cátia Maria de Jesus Nunes
Inês Garcia de Oliveira Trindade
Matilde de Vasconcelos Manso Ataide Cordeiro
Silvana Coelho Cardoso
Nuno Felipe Alves de Almeida
Pedro Manuel Reis Mendes Moreira
Rafaela Josemara Barbara Queiros
Cláudio Francisco Soares Capitão
Diogo Manuel Amaral Geraldes
Miguel André Lourenço da Luz Ventosa
Leonor Alexandra da Silva Tomaz
Mara Lisa Vieira Alves
Susana Murtinheira da Trindade Leitão

Investigator Auxiliar
Invited Researcher
Invited Researcher
Post Doc
Post Doc
Post Doc
Post Doc
Science Com. (CIB)
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
Master Student
Master Student
Master Student
BI
BI
BI

Plant Cell Wall

Philip Jackson, Investigador Auxiliar
Luís Filipe Sanches Goulão
Ada Doroteia Vatulescu

Investigator
PhD Student
Plant Developmental Genetics

Jorge Almeida, Professor Associado ISA-UTL
Maria Lisete Galego Dias

Plant Genetic Engineering

Margarida Oliveira, Professor Associado com Agregação
Rita Maria Cruz de Campos Batista
Isabel Alexandra Aguiar de Abreu
Nelson José Madeira Salbo
Ana Paula Leitão dos Santos
Sam Cherian
Sónia Sandra Cabrita Negrão
Tiago Filipe dos Santos Lourenço
Duarte Dionísio Figueiredo
Milene Soares Costa
Pedro Miguel Rodrigues de Barros
Tânia Sofia Lobato Paulo Serra
Liliana de Jesus Duarte Ferreira
Subhash Chander
Ana Paula Martins Farinha Resende
Mafalda Alexandra Antunes Rodrigues
Tiago Miguel Caetano Dias Cruz
Pedro Miguel de Sousa Babo
Maria Cecília Marques dos Santos Mousinho
João Fernandes Oliveira dos Santos
Diego Melo Almeida
Eva Gonçalves Serra

Investigator Auxiliary
Invest Auxiliar INSA
Invest Auxiliar IBMC
Investigator Auxiliary
Post Doc
Post Doc
Post Doc
Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
BTI (Master Std.)
Master Student
BI (Master)
BI
BI
Trainee

Plant Molecular Ecophysiology

Manuela Chaves, Professor Catedrático Aposentado ISA-UTL
Alla Schvaleva
Ana Paula Martins Alves Ferreira Regalado
Olfa Zarrouk
Tiago Pedreira dos Santos
Joaquim Miguel Costa
Lukasz Tronina
Rita Maria de Brito Francisco
Raquel do Vale
Ana Rita Leandro dos Santos
Nuno Miguel Lopes da Silva Santos Simões
Raquel Raissa Santos
Norberto Heredia Guerrero
Liliana de Pinho Pinhal Ferraz Moreira

Post Doc
Post Doc
Post Doc
Post Doc
Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
BI
BI
BI
Trainee
Research
Chemistry
Biological Chemistry
Biology
Plant Sciences
Technology

Analytical Chemistry
Luís Filipe Silva Castro Vilas Boas, Professor Associado IST
Maria do Rosário Beja Figueiredo G. Bronze
Maria Nubélia Bravo
Antero Augusto Ramos
Susana Maria Marques Nunes
Elisa Maria Farias Riscado
Paulo André de Sousa Esteves da Silva

Antibiotic Stress and Virulence of Enterococci
Fátima Lopes, Investigador Auxiliar
Paulo Emanuel de Oliveira Marujo
Tânia Catarino Ribeiro
Marta Maria Coelho dos Santos Abrantes
Teresa Marina Fonseca de Almeida Santos Braga
Renata Filipa Cruz de Matos
Neuza Prazeres Teixeira
Sofia Alexandra Muchacho Santos
Marta Isabel da Silva Ruivo

Applied and Environmental Mycology
Cristina Maria da Costa Silva Pereira, Investigador Auxiliar
Mariana Boavida Lopes Carvalho
Isabel Tavares Lima Martins (cosup. Luís Paulo N. Rebelo)
Adélia Varela Castro
Helga Margarida Garcia (cosup. Luís Paulo N. Rebelo)
Marija Petkovic
Rui Manuel C. Ferreira (cosup. Luís Paulo N. Rebelo)
Paula Cristina de Azevedo Alves
Cátia Filipa Mendes Rodrigues
Diego de Oliveira Hartmann
Patrícia Alexandra dos Santos Borges Pereira

Technology
Biomathematics

Jonas S. Almeida, Professor Catedrático Convidado
Maria Helena Futcher de Deus

PhD Student

Biomolecular Diagnostic

Abel Oliva, Investigador Auxiliar
Cláudia Sánchez Lara
Elisa Regina Figueiras Julião Inácio de Campos
Ana Raquel da Silva Santos
José Valério Nascimento Palmeira
Tiago Miguel Caetano Dias Cruz
Mariana Alves Reis

Investigador
PhD Student
BI
Master Student
Trainee

Animal Cell Technology Unit

Cell Bioprocesses

Paula M. Alves, Investigador Principal
Ana Catarina Ataide Montes
Helena de Araújo Vieira
Ana Carina Santos Ferreira
Ana Isabel Porém Amaral
Cláudia Queiroga
Leonor da Gama Carvalho Norton
Maria Margarida Negrão Serra
Nuno Eduardo Buxo Carinhas
Rita Maria Maia Malpique
Sofia Margarida Leite
Ricardo Perdigão Henriques
Fabiana Carreira Fernandes
Daniel Filipe Mestre Simão
Marcos Filipe Quintino de Sousa
Carina Vieira Brilha Técnica

Investigador Auxiliar
Post Doc
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
PhD Student
Master Student
Technician

Animal Cell Technology Unit

Cell Line Development and Molecular Biology

Ana Sofia Coroadinha, Investigador Auxiliar
Ana Filipa Rodrigues
Ana Mendes
Vanessa Isabel Ferreira Veríssimo
Hélio Antunes Tomás

PhD Student
BI
Trainee

Animal Cell Technology Unit

Engineering Cellular Applications

Manuel Carrondo, Professor Catedrático FCT-UNL
Ana Margarida Palma Teixeira
Cristina Maria da Costa Peixoto Lisboa
Vishal Agrawal
António Manuel Missionário Roldão
Tiago Manuel Ferreira Silva Vicente
Rui Manuel Lucas Gameiro Domingues Tostões

Investigador Auxiliar
Researcher Technician
Post Doc
PhD Student
PhD Student
PhD Student (MIT)
Food Microbial Technology

Cidália Peres, Investigador Principal INRB
Francisco Xavier Delgado Malcata
Maria Dulce de Azevedo Carneiro de Brito
Amélia Maria Muralha Delgado
Luísa Reis
Maria Cristina de Almeida Pelejão Serrano
Luís Filipe Duarte Catulo
Ana Marta Franco
Ruben Filipe Martins da Rocha
Maria José Cancela Carvalho

Mass Spectrometry

Ana Coelho, Professor Auxiliar Convidado
Romana Lopes Almeida dos Santos
André Martinho de Almeida
Peter Imre Boross
Renata Filipe Soares
Kamila Koci
Ricardo Jorge dos Anjos Gomes
Catarina de Matos Ferraz Franco
Duarte Nuno Toubarro Tiago
Marta Maria Lavouras Mendes
Ana Sofia de Figueiredo Rodrigues
Ângela Maria Almeida Barreto
Elisabete Andrade Alves Pires

Microbiology of Man-Made Environments

Teresa Crespo, Investigador Principal IBET
Vanessa Ranhada Pinto Jorge Pereira
Gilda Sousa de Carvalho
Patrícia Rodrigues Noronha da Costa
Ana Filipa Correia Silva
Frédérique Bustos Gaspar
Paula Isabel Loução Lopes Alves
Bárbara Fonseca de Almeida
Rosalina Nunes Marques
Marta Raquel Conchinha Marques
Sandra Marisa Lourenço Sanches
Ana Catarina Mendonça Dourado

Prof. Catedrático UCP
Investigador INRB
Investigador
Investigador Auxiliar
Investigador Auxiliar
Post Doc
Post Doc
PhD Student
PhD Student
BI
BI
Trainee

Investigador
Investigador
Investigador
Investigador Auxiliar
Investigador Auxiliar
Post Doc
Post Doc
PhD Student
PhD Student
BI
BI
Technician
Molecular Thermodynamics

Luís Paulo N. Rebelo, Professor Catedrático
Isabel Maria Delgado Jana Marrucho Ferreira
José Manuel da Silva Simões Esperança
Ana Rodríguez Rodriguez
Mara Guadalupe Freire Martins
Mohammad Tariq
Francisco Javier Deive Herva
Ana Belén Pereiro Estévez
Marija Petkovic (cosup. Cristina Silva Pereira)
Helga Margarida Garcia (cosup. Cristina Silva Pereira)
Isabel Tavares Martins (cosup. Cristina Silva Pereira)
Rui Manuel C. Ferreira (cosup. Cristina Silva Pereira)
Helena Isabel Abrantes de Gouveia da Mota Veiga
Filipe Serrão Santos Oliveira
Mário Rui Costa Soromenho
Carlos Alberto da Silva Ribeiro de Melo
Diana Carolina Vaz Ruivo de Oliveira

Pharmacokinetics and Biopharmaceutical Analysis

Ana L. Simplício, Investigador Auxiliar
Vukosava Djordjevic Milic
Hugo Ortolá de Abreu e Serra
Joana Catarina Rocha Lamego
Nádia Ferreira da Silva Santos
Rui Miguel Correia Portela

Physiology of Environmental Conditioned Microbiota

Vitória San Romão, Investigador Coordenador INRB
Ana Paula Gomes Marques
Maria do Carmo Barreto Baptista Basílio
Tânia Isabel Paixão da Silva Madeira
Cecília Gonçalves Simão
Ana Margarida Conchinha Marques

Systems Biodynamics

Andreas Bohn, Investigador Auxiliar
Daniel Santa Cruz Damineli

Nutraceuticals and Delivery

Catarina Duarte, Investigador Auxiliar
Ana Alexandra Figueiredo Matias
Ana Teresa de Carvalho Negrão Serra
Mariana Isabel Ferreira Nobre de Sousa Costa
Ana Vital Morgado Marques Nunes
Ana Patrícia Correia de Almeida
Susana Rodrigues Marques
Duarte Maria Torres Alves Sousa Rêgo
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 Rockefeller 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
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 involves a 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.

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 in three Laboratories with different expertise.

Analytical Laboratory
The laboratory has a long track record of providing services using chromatographic (HPLC and GC with several detectors) and electrophoretic methods for pharmaceutical, agro and chemical industry 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.

Protein Characterization and Mass Spectrometry Laboratory
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.

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 whole institute.
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 Portuguese NMR network created with the support of the Fundação para a Ciência e a Tecnologia (FCT) in the frame 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 integrate RNEM (Rede Nacional de Espectrometria de Massa), an infrastructural network launched in 2007, under the general National Program for Scientific Re-equipment.

Massachusetts Institute of Technology - Portugal

The MIT - Portugal partnership is an international collaboration between the Portuguese state and the MIT, focused on the areas of 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 Bio-engineering 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. As External Partners, it includes 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 in 1.9 million euros under SUDOE Programme. The consortium’s main objective is to develop interdisciplinary research in the interface between chemistry and life/health sciences.
Research Output


Book chapters


Other (national publications)


Research Output
Ongoing Projects
Projects coordinated by ITQB Researchers / Project where ITQB researchers participate

PROJECTS FUNDED BY FCT

Role of the interaction between AgfA and AgfB proteins from Salmonella enterica serovar Typhimurium in the surface polymerization of the amyloid-like thin aggregative fimbriae.

Cytochrome c: A model protein to probe thermodynamic and choreographic constraints in electroprotonic energy transducers

Exploiting genetic variability of resistance genes in major European food legumes to improve varieties for sustainable agriculture

Genomic research-assisted breeding for sustainable production of quality GRAPEs and WINE
ERA-PG/005/2006 Pedro Fevereiro 85.700 2007-2010

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

Tannin polymerase, a novel and previously unknown enzyme that is required by obligate pathogens to invade grapevine tissues
PTDC/AGR-AAM/65611/2006 Ricardo Boavida Ferreira 126.456 2007-2010

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 2007-2010

Understanding sulfate respiration at molecular level: studies of two conserved membrane complexes
PTDC/QUI/68368/2006 Inês Cardoso Pereira 74.700 2007-2009

Z-DNA and Z-RNA: the long road to a biological function
PTDC/SAU-MII/69084/2006 Maria Arménia Carrondo 159.643 2007-2010

Novel stroke model for neuroprotective research: bioreaction of primar brain cell aggregates
PTDC/BIO/69407/2006 Paula Alves 169.000 2007-2010

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 2007-2010

In search of ideal protein stabilisers: compound libraries inspired by solute from hyperthermophiles
PTDC/BIO/70806/2006 Pedro Lamosa 105.000 2007-2010

Analysis of the breeding potential of fascination traits in Portuguese maize landraces
PTDC/AGR-AAM/70845/2006 Carlota Vaz Patto 77.100 2007-2010

Molecular Adaptation to Extreme Environments: Structural Studies of Proteins Involved in the Synthesis of Osmolytes in (hyper)thermophilic micro-organisms
PTDC/QUI/71142/2006 Pedro Matias 85.500 2007-2010

Contribution of the capsular polysaccharide to the inflammatory ability of the bacterial peptidoglycan
PTDC/SAU-MII/75696/2006 Sérgio Filipe 159.686 2007-2010
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Grant Code</th>
<th>PI</th>
<th>Budget</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Impact of nonencapsulated strains on the ecology and pathogenesis of Streptococcus pneumoniae</td>
<td>PTDC/BIA-MIC/64010/2006</td>
<td>Raquel Sá Leão</td>
<td>110.000</td>
<td>2008-2010</td>
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<td>Chromatin remodelling and abiotic stresses responses in rice</td>
<td>PTDC/BIA-BCM/64215/2006</td>
<td>Ana Paula Santos</td>
<td>52.000</td>
<td>2008-2011</td>
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<td>Chiral N-heterocyclic carbene complexes for asymmetric catalysis and for C-H activation processes</td>
<td>PTDC/QUI/64458/2006</td>
<td>Beatriz Royo</td>
<td>80.100</td>
<td>2008-2010</td>
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<tr>
<td>Structural, bioenergetic and dynamic aspects of respiratory chain complexes studied by vibrational and spectroelectrochemical methods</td>
<td>PTDC/QUI/64550/2006</td>
<td>Smilja Todorovic</td>
<td>44.800</td>
<td>2008-2010</td>
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<tr>
<td>Investigating the energy transduction Q-cycle mechanism in complexes of respiratory chains</td>
<td>PTDC/BIA-PRO/66557/2006</td>
<td>Manuela Pereira</td>
<td>96.000</td>
<td>2008-2011</td>
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<td>Searching for the functional/structural minimum common denominator in haem-copper oxygen reductases</td>
<td>PTDC/QUI/66559/2006</td>
<td>Manuela Pereira</td>
<td>70.700</td>
<td>2008-2010</td>
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<td>A structural genomics approach to membrane transport proteins from Archaea</td>
<td>PTDC/BIA-PRO/66833/2006</td>
<td>Margarida Archer</td>
<td>45.000</td>
<td>2008-2009</td>
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<td>Iron metabolism in sulphate reducing bacteria</td>
<td>PTDC/BIA-PRO/67107/2006</td>
<td>Lígia Saraiva</td>
<td>83.000</td>
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<td>Microbial enzymes involved in superoxide and nitric oxide reduction</td>
<td>PTDC/BIA-PRO/67263/2006</td>
<td>Miguel Teixeira</td>
<td>116.000</td>
<td>2008-2010</td>
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<td>Integrated view of the early steps in bacterial cell wall synthesis</td>
<td>PTDC/BIA-MIC/67845/2006</td>
<td>Mariana Pinho</td>
<td>132.384</td>
<td>2008-2010</td>
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<td>Biochemical and Structural Studies of UDP-Glucose Dehydrogenases</td>
<td>PTDC/QUI/67925/2006</td>
<td>Carlos Frazão/Cecília Arraiano</td>
<td>77.480</td>
<td>2008-2010</td>
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<td>Quinol oxidation by membrane cytochromes c widely implicated in bacterial respira-tion - structural studies of the model NrfHA complex</td>
<td>PTDC/BIA-PRO/68486/2006</td>
<td>Inês Pereira</td>
<td>92.000</td>
<td>2008-2010</td>
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<td>Towards the understanding of the energetic and structural interplay between metal sites and protein folding</td>
<td>PTDC/QUI/70101/2006</td>
<td>Cláudio Gomes</td>
<td>70.800</td>
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<td>Towards biohydrogen production - study of a high-activity, oxygen-resistant bacterial hydrogenase</td>
<td>PTDC/BIA-PRO/70429/2006</td>
<td>Pedro Matias</td>
<td>112.000</td>
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<td>Analysis of the natural variability in Rice (Oryza sativa L.) through EcoTILLING in salt and cold tolerance genes</td>
<td>PTDC/AGR-GPL/70920/2006</td>
<td>Margarida Oliveira</td>
<td>212.284</td>
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<td>Regulatory networks on <em>Staphylococcus aureus</em> cell wall physiology</td>
<td>PTDC/BIA-MIC/71168/2006</td>
<td>Hermínia de Lencastre</td>
<td>136.979</td>
<td>2008-2010</td>
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<td>Multilevel modelling of physical and biochemical processes in phototrophic biofilms</td>
<td>PTDC/BIA-MIC/72512/2006</td>
<td>Andreas Bohn</td>
<td>94.000</td>
<td>2008-2010</td>
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<td>Ionic Liquids - Fundamental Study of Properties</td>
<td>PTDC/CTM/73850/2006</td>
<td>José Esperança</td>
<td>44.350</td>
<td>2008-2010</td>
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<td>Transcriptional regulation of the genes encoding the flavodiiron protein ROO and the cytochrome BD respectively of the anaerobe bacterium Desulfovibrio gigas upon nitrosative stress</td>
<td>PTDC/BIA-MIC/70650/2006</td>
<td>Claudina Rodrigues Pousada</td>
<td>189.400</td>
<td>2009-2012</td>
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<td>Chromosome cohesion and DNA repair in Arabidopsis</td>
<td>PTDC/BIA-BCM/64192/2006</td>
<td>José da Costa Nunes</td>
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<td>Site-specific labeling of proteins <em>in vitro</em>, in vivo and at the cell surface by a novel type of transglutaminase isolated from spores of Bacillus subtilis</td>
<td>PTDC/BIO/73946/2006</td>
<td>Adriano Henriques</td>
<td>87.555</td>
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<td>Chemical reactivity as a tool in drug design: modification of the beta-lactam scaffold to improve serine protease inhibition</td>
<td>PTDC/QUI/64056/2006</td>
<td>Margarida Archer</td>
<td>23.325</td>
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<td>Molecular Evaluation and Characterization of Tolerance Mechanisms to Adverse Environmental Conditions in Coffea sp. - Central Role of the Oxidative Stress Control at Leaf Level</td>
<td>PTDC/AGR-AAM/64078/2006</td>
<td>Manuela Chaves</td>
<td>29.930</td>
<td>2007-2010</td>
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<td>DynaMo - Dynamical modeling, control and optimization of metabolic networks</td>
<td>PTDC/EEA-ACR/69530/2006</td>
<td>Helena Santos</td>
<td>81.621</td>
<td>2007-2010</td>
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<td>Enzymatic degradation and synthesis of Azo and antraquionic dyes</td>
<td>PTDC/BIO/72108/2006</td>
<td>Ana Coelho</td>
<td>16.800</td>
<td>2007-2010</td>
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<td>BioMode - From data to modelling on biofilm phenotype</td>
<td>PTDC/BIO/73550/2006</td>
<td>Andreas Bohn</td>
<td>11.760</td>
<td>2007-2010</td>
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Gas Phase Reactions on Ionic Liquids  
PTDC/QUI/66199/2006  
José N. Canongia Lopes  
12.500  
2008-2010

Synthesis and Characterization of New and not so-New Ionic Liquids  
PTDC/QUI/66826/2006  
Luís Paulo N. Rebelo  
13.800  
2008-2011

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

High Pressure CO2-Induced Melting of Salts: New Ionic Liquids  
PTDC/QUI/70383/2006  
Manuel N. Ponte  
25.020  
2008-2010

Protein glycation and transthyretin amyloidogenesis in yeast: A model system of  
neurodegenerative amyloid diseases  
PTDC/QUI/70610/2006  
Ana Coelho  
48.050  
2008-2010

Integrated Isolation, Bio- and Organic-Synthetic Transformations of Portuguese Natural Resources  
PTDC/QUI/73061/2006  
Cristina Silva Pereira  
30.000  
2008-2011

Polymer plasticization and compatibility using Green Technologies. Application of  
ionic liquids and supercritical fluids  
PTDC/QUI/71398/2006  
Luís Paulo N. Rebelo  
37.800  
2008-2011

Anchoring Basic Parameters for Fundamental Predictive Models in Liquid Salt Systems  
PTDC/QUI/72903/2006  
José Esperança  
10.800  
2009-2011

Sol-gel entrapped cutinase: Understanding enzyme/matrix interactions via fluorescence, NMR and DRIFT spectrosopies, and site-directed mutagenesis  
PTDC/QUI/64744/2006  
Isabel Sá Nogueira  
15.000  
2009-2011

Anthocyanins as natural photoprotectors  
PTDC/QUI/65728/2006  
Eurico de Melo  
9.600  
2009-2011

Respiratory rehabilitation in Amyotrophic Lateral Sclerosis: clinical and biochemical impact  
PIC/IC/82765/2007  
Júlia Costa  
86.968  
2009-2011

MIT – Bioengineering Systems  
MIT-PT/BS-BB/0014/2008  
Cláudio Soares  
446.672  
2006-2009

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

Pathogenomics of increased Clostridium difficile virulence  
ERA-PTG/SAU/0002/ 2008  
Adriano Henriques  
181.800  
2009-2012

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

Cork Oak ESTs Consortium – Bioinformatics Platform  
Sobreiro/0030/2009  
Andreas Bohn  
17.322  
2009-2010

Development of ultra-sensitive detection methods and plant Nano-Vacinnes for the  
Fungi Fusarium spp using nanotechnological devices  
Nano/NTec-SQA/0131/2007  
Abel Oliva  
119.792  
2009-2011

PROJECTS FUNDED BY FUNDAÇÃO CALOUSTE GULBENKIAN

Community-associated methicillin-resistant Staphylococcus aureus (CA-MRSA) in Por- 
tugal: a pilot study focusing on an emerging public health concern  
MM/P-99911  
Hermínia de Lencastre  
61.918  
2009-2012
<table>
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<tr>
<th>Project Title</th>
<th>Code</th>
<th>Principal Investigator</th>
<th>Funding (€)</th>
<th>Duration</th>
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<tr>
<td>European macromolecular crystallography infrastructure network 2 (MAX-INFO 2)</td>
<td>RICA 505977</td>
<td>Maria Arménia Carrondo</td>
<td>36.700</td>
<td>2004-2009</td>
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<tr>
<td>From receptor to gene: structures of complexes from signalling pathways linking immunology, neurobiology and cancer (SPINE2-COMPLEXES)</td>
<td>LSHG-CT-2006-031220</td>
<td>Maria Arménia Carrondo</td>
<td>206.750</td>
<td>2006-2009</td>
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<td>Genomics to combat resistance against antibiotics in community – acquired LRTI in Europe (GRACE)</td>
<td>LSHM-CT-2005-518226</td>
<td>Hermínia de Lencastre</td>
<td>129.216</td>
<td>2006-2011</td>
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<tr>
<td>White biotechnology for added value products from renewable plant polymers: design of tailor-made biocatalysts and new industrial bioprocesses (BIORENEW)</td>
<td>NMPT2-CT2-2006-026456</td>
<td>Lígia O. Martins / Cláudio Soares</td>
<td>417.000</td>
<td>2006-2010</td>
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<td>Training for high volume, high value structural genomics methodologies (TEACH-SG)</td>
<td>LSSG-CT-2006-031220</td>
<td>Maria Arménia Carrondo</td>
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<td>2007-2009</td>
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<td>Sustainable water use Securing Food production in dry areas of the mediterranean region (SWUP-MED)</td>
<td>212337</td>
<td>Manuela Chaves</td>
<td>310.880</td>
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<td>A Doctoral training network in integrative studies of Plant Stress Biology (ADONIS)</td>
<td>MEST-CT-2005-020232</td>
<td>Margarida Oliveira</td>
<td>155.519</td>
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<tr>
<td>Genotyping for the conservation and valorization of European Rice germplasm (EURI-GEN)</td>
<td>049 AGRI GEN RES 870/2004</td>
<td>Margarida Oliveira</td>
<td>48.713</td>
<td>2008-2010</td>
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<td>Structural Biology of Membrane Proteins</td>
<td>PITN-GA-2008-211800</td>
<td>Margarida Archer</td>
<td>284.099</td>
<td>2008-2012</td>
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<td>Setting the Stage in Portugal: researchers and the public come together through theatre</td>
<td>SP3 - 245061</td>
<td>Ana Sanchez</td>
<td>18.650</td>
<td>2009</td>
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<td>A comprehensive dissection of pneumococcal-host interactions – (PNEUMOPATH)</td>
<td>HEALTH-F3-2009-222983</td>
<td>Hermínia de Lencastre</td>
<td>150.000</td>
<td>2009-2012</td>
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<td>CONtrol of COMMunity-acquired MRSA: Rationale and Development of counteractions (CONCORD)</td>
<td>HEALTH-F3-2008-222718</td>
<td>Hermínia de Lencastre</td>
<td>202.512</td>
<td>2009-2011</td>
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<td>The “FluoRox” concept; advanced Education and Research in Bio-NanoScience (EDROX)</td>
<td>MRTN-CT-2006-035649</td>
<td>Yann Astier</td>
<td>78.757</td>
<td>2009-2010</td>
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# Research Output

## Ongoing Projects

### Individual Fellowships by European Commission

<table>
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<th>Project Description</th>
<th>Code</th>
<th>Investigator</th>
<th>Amount</th>
<th>Year</th>
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<tr>
<td>Designing metallopeptides for the removal of superoxide radicals (MFRosPep)</td>
<td>PIRG03-GA-2008-230896</td>
<td>Olga Iranzo</td>
<td>100.000</td>
<td>2008-2012</td>
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<tr>
<td>Analysis of the cellular function of type III secretion effectors of <em>Chlamydia trachomatis</em> (CHLRT3SE)</td>
<td>PERG03-2008-230954</td>
<td>Jaime Mota</td>
<td>45.000</td>
<td>2009-2011</td>
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<td>ER Stress and Photoreceptor Degeneration in Drosophila (DROSOERSTRESS)</td>
<td>Pirgga-2008-230935</td>
<td>Pedro Domingos</td>
<td>100.000</td>
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### Project funded by EEAA and Norway Grants

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<th>Code</th>
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<th>Amount</th>
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### Projects funded by NIH through Rockefeller University (amounts in USD)

<table>
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<th>Investigator</th>
<th>Amount</th>
<th>Year</th>
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<tr>
<td>Evolution and acquisition of drug resistance in MRS</td>
<td></td>
<td>Sérgio Filipe</td>
<td>284.012 $ USD</td>
<td>2005-2009</td>
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### Subcontracting Parties – Georgia Institute of Technology (amounts in USD)

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<tr>
<td>Assessment of pathway design through multi-level modeling and experiments</td>
<td>NSF</td>
<td>Helena Santos</td>
<td>61.818 $ USD</td>
<td>2006-2009</td>
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Education Output
PhD Theses
completed in 2009

Catarina Isabel Catarino Milheirîço (Biology)
“Studies on Methicillin-resistance cassette in Staphylococcus aureus: New typing strategies and insights into the regulation of resistance expression”
Supervisor: Hermínia de Lencastre/Duarte C. Oliveira

Cristina Maria da Costa Peixoto Lisboa (Engineering and Technological Sciences)
“Challenges in the Purification of Complex Biopharmaceuticals”
Supervisor: Paula Marques Alves

Jorge Manuel Martins Cunha (Biology)
“Diversidade biológica de Vitis vinifera L em Portugal: contribuição genética da subsp. sylvestris (Gmelin) Hegi para a origem das castas Portuguesas, subsp. vinifera”
Supervisor: Pedro Feveireiro/José Eiras Dias

Liliana Maria Bota Marum (Biology)
“Genetic and epigenetic approaches to evaluate stability during in vitro propagation of Pinus pinaster Ait.”
Supervisor: Margarida Oliveira/Célia Miguel

Luís Miguel Barroso Pereira Lima (Chemistry)
“New Tetraaza Macrocyclic Ligands with Potential Medical Interest: Synthesis and Study of their Transition Metal and Lanthanide Complexes”
Supervisor: Rita Delgado

Marco António Mattos Vilela (Biology)
“Automated reverse engineering of metabolic pathways from time series”
Supervisor: Jonas Almeida

Maria Cândida Maia Mellado (Engineering and Technological Sciences)
“Triple-layered rotavirus-like particles production: a focus on in vitro assembly and disassembly”
Supervisor: Manuel Carrondo/Paula Alves

Maria Luis Guimarães Amorim (Biology)
“Insight into the local epidemiology of Methicillin-resistant Staphylococcus aureus (MRSA) in a Portuguese Hospital”
Supervisor: Hermínia de Lencastre/Duarte C. Oliveira/José M. Cabeda/Carlos Vasconcelos

Marlene Isabel Rosa do Carmo (Engineering and Technological Sciences)
“Gammaretroviral and Lentiviral vectors for Gene Therapy: Stability and Inactivation Mechanisms”
Supervisor: Manuel Carrondo/Pedro Cruz

Marta Gomes da Silva (Engineering and Technological Sciences)
“Development of a new Babesia bovis diagnostic method and identification of new vaccine candidates”
Supervisor: Abel Oliva

Nuno Alexandre Gomes Faria (Biology)
“Molecular epidemiology of methicillin-resistant Staphylococcus aureus: typing strategies and epidemiology trends”
Supervisor: Hermínia de Lencastre/Duarte C. Oliveira/Henrik Westh

Nuno António Gonçalves Moreno (Biology)
“Oscillatory behavior in pollen tubes: the biophysical and biochemical fundamental basis of cell growth and morphogenesis”
Supervisor: José Feijô

Patrícia Isabel Gomes Alves (Biology)
“Cystic Fibrosis By Proteomics: Identification of Molecular Targets for Therapeutic Intervention”
Supervisor: Deborah Penque/Ana Coelho

Regina Maria Fonseca da Luz Freitas (Biochemistry)
“Expression of protein biologic activity. Different strategies in a space/time referential”
Supervisor: Ricardo Ferreira

Ricardo Jorge Martins Gouveia (Biology)
“The neuronal L1 cell adhesion molecule – Procution, characterization and biological role”
Supervisor: Júlia Costa

Rute de Almeida Ferreira de Castro (Biochemistry)
“Metabolism in Lactococcus lactis: Glucose Transporters and a Novel α-Phosphoglucomutase”
Supervisor: Helena Santos/Ana Rute Neves
Master Theses in Medical Microbiology
completed in 2009

Sara Isabel Rodrigues Rasteiro de Campos (Biochemistry)
“Study of the effect of pH on the structure and function of peptides and proteins using molecular simulation methods”
Supervisor: António Baptista

Sónia Adelaide Q.S. Santos Rocha (Biochemistry)
“In Vitro models for metabolic studies of Brain insults”
Supervisor: Paula Alves

Susana André Lima Lobo (Biochemistry)
“Anaerobic bacteria: an investigation of metabolic important enzymes. A novel type of oxygen reductase and enzymes of the tetrapyrrole biosynthesis”
Supervisor: Lígia Saraiva

Tiago Jorge de Pinho Carvalho - PGDB (Biology)
“The Computational Role of Short-Term Plasticity and the Balance of Excitation and Inhibition in Neural Microcircuits: Experimental and Theoretical Analysis”
Supervisor: Sukalyan Chatterjee/Dean Buonomano

Ana Margarida Teixeira Saramago
“Post-transcriptional studies in Salmonella focusing on the role of RNases and small non-coding RNAs”
Supervisor: Cecilia M. Arraiano

Ana Daniela de Araújo Sampaio
“Efluxo de brometo de etidio no complexo Mycobacterium avium: correlação com a resistência intrínseca aos antibióticos em estirpes de origem clínica”
Supervisor: Miguel Viveiros

Celeste Manuela Falcão
“Importância dos Sistemas de Efluxo na Resistência às Fluoroquinolonas em Staphylococcus aureus”
Supervisor: Isabel Couto

Frederico Gustavo Ferreira de Melo e Silva
“Estudo comparativo entre a antigenemia e uma técnica de PCR em tempo real para o diagnóstico e monitorização das infecções pelo vírus citomegálico humano em doentes transplantados”
Supervisor: Teresa Marques/co-sup: Paulo Paixão

Helena Isabel Ribeiro Nunes
“Chlamydia trachomatis em populações de risco: detecção de anticorpos e de DNA”
Supervisor: Filomena Pereira/co-sup: Rita Castro
Scientific Events
Scientific Meetings in 2009

Organized by ITQB Researchers

EMBO-FEMS Workshop on Microbial Sulfur Metabolism
Tomar, Portugal, 15-19 March
Inês C. Pereira, organizer

International Workshop on
‘Protein Folding Diseases: from metabolic disorders to neurodegeneration’
ITQB, Oeiras, Portugal, 19 March
Cláudio Gomes (Chair), Bárbara Henriques, João Rodrigues, Organising Committee

Annual meeting of the Marie Curie Integrated Training Network
“Structural Biology of Membrane Proteins” (SBMP)
ITQB, Oeiras, Portugal, 4-6 June
Margarida Archer, organizer

21st European Society for Animal Cell Technology Conference
Dublin, Ireland, 7-11 June
Paula Alves, Member of Executive Committee

2nd CERMAX practical course on basic NMR
CERMAX, ITQB, Oeiras, Portugal, 17-19 June and 21-23 October
Pedro Lamosa (chair), Manolis Matzapetakis, Patrick Grooves, Organizers

XI Congreso Hispano-Luso de Fisiología Vegetal
Zaragoza, Spain, September
Manuela Chaves, Member of Organizing Committee

FEBS advanced course chemistry of metals in biological systems
Louvain-la-Neuve, Belgium, September
Ricardo Louro, organizer

V Simpósio Nacional de Olivicultura.
Santarém, Portugal, September
Cidália Peres, Member of Management Committee

8th Plant Genomics European Meeting
Lisbon, Portugal, 7-10 October
Margarida Oliveira (chair), Cândido Pinto Ricardo, Célia Miguel, Isabel Abreu, Nelson Saibo, Members of Organizing Committee
Primeiro Encontro do Projecto
“CA-MRSA/MSSA: da diversidade genética ao potencial patogénico”
ITQB, Oeiras, Portugal, 10 October
Herminia de Lencastre, Maria Miragaia, Rosario Mato, Ana Tavares, Joana Rolo, Organizers

Workshop on Oxidative Stress at the
4th International Congress on Stress Response in Biology and Medicine
Sapporo, Japan, October
Claudina R. Pousada

8th Short course of the Short course of the Portuguese Biophysical Society
“Systems Biology”
Santarém, Portugal, 30 October - 1 November
Cláudio Soares, Lígia Martins, Members of Organizing Committee

V Congresso Nacional de RNA – RNA09
Carcavelos, Portugal, 5-6 November
Cecília Arraiano, Member of Organizing Committee

Biomolecular NMR “from Liquids to Solids”
UNL, Lisbon, Portugal, 2 December
Pedro Lamosa (chair), Manolis Matzapetakis, Patrick Grooves, Organizers

COST863 Management Committee and Workshop on
‘Defining needs of berry industries’
Lisbon and Odemira
Cláudia Santos, Member of Organizing Committee

9th Short Course of the Portuguese Biophysical Society on “Systems Biology”
Manuela Pereira, organizer

Conferências Sociedade Portuguesa Biofísica
Manuela Pereira, organizer
ITQB Researchers as Members of Scientific Committees

**Ana Coelho**
5th Congress of the Portuguese Proteomics Network
ProCura and 1st International Congress on Analytical Proteomics
October 2009 ICAP, Caparica, Portugal

**Cândido Pinto Ricardo**
and Carla Pinheiro were the Portuguese members of the Managing Committee
COST Action nº FA0603 “Plant Proteomics in Europe”

**Claudina Rodrigues-Pousada**
Member of the scientific committee of the 4th International Congress on Stress Response in Biology and Medicine

**Cecília Arraiano**
Member of Scientific Committee of V Congresso Nacional de RNA – RNA09
5-6 November 2009, Carcavelos, Portugal.

**Cidália Peres**
Member of the Scientific Committee of III International Conference on Table Olives, Spain

**Helena Santos**
Member of the Scientific Committee and Coordinator of the Symposium “Microbial Physiology” in MicroBiotec09, 28-30 November 2009.
Permanent Member of the International Organizing Committee of the series of meetings “International Congress on Extremophiles”

**Herminia de Lencastre**
Member of the Scientific Committee of the 9th European Meeting on the Molecular Biology of the Pneumococcus-Europneumo 2009. 4-7 June 2009, Bern, Switzerland
Member of the Scientific Committee of the Congresso Nacional de Microbiologia e Biotecnologia, MICRO-BIOTEC 09. 28-30 November 2009, Vilamoura, Portugal

**Júlia Costa**
Member of the Scientific Committee, 8th International Meeting of the Portuguese Carbohydrate Chemistry Group - Glupor 8, Braga, Portugal, 2009.

**Lígia O. Martins**
Member of the Scientific Committee of the “8th Short Course of the Portuguese Biophysical Society in Systems Biology”, 30 October to 1 November Santarém, Portugal

**Luis Paulo N. Rebelo**
Member for the International Scientific Advisory Committee for the 3rd Congress on Ionic Liquids (COIL3), 2009, Cairns, Australia
Iberian Meeting on Ionic Liquids, Member Organizing Committee, 15-16 June Aveiro, Portugal
Permanent member of the International Organizing Committee of the Congresses on Ionic Liquids
Manuela Chaves
Member of Programme Committee of the Scientific Committee INTER-DROUGHT III October 2009. Shanghai, China

Manuela Pereira
Member of the Scientific Committee of VII Iberoamerican Congress of Biophysics 2009, Búzios, Brazil

Margarida Oliveira
Member of the Scientific Committee of XI Congreso Hispano-Luso de Fisiología Vegetal, September 2009, Zaragoza, Spain

Rosário Bronze/Luís Vilas Boas
Member of the Scientific Committee of 6º Encontro de Cromatografia, December 2009, Funchal, Portugal
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

Hematological malignancies: from the patient to the lab and back to the clinic
António Parreira, Faculdade de Ciências Médicas, Universidade Nova de Lisboa

Computational enzymatic catalysis
Maria João Ramos, Faculdade de Ciências, Universidade do Porto

Spatial control of the cell division clock
Helder Maiato, IBMC

The essence of chemistry
Jorge Calado, Instituto Superior Técnico, Universidade Técnica de Lisboa

Astrophysical conditions for the life in the Universe
Rui Jorge Agostinho, Faculdade de Ciências, Universidade de Lisboa

Enabling environments for biotechnology
Carlos Faro, Biocant

What, if anything, is an extremophile?
Milton Costa, Universidade de Coimbra

Nanocomposite particles for bio-applications
Tito Trindade, Universidade de Aveiro

Frontier Leaders Seminars

Third generation transgenic plants and the politics of plant biotechnology
Paul Christou, Universitat Leida, Spain

A systems approach to virus entry
Ari Helenius, ETH Zurich, Switzerland

Other Invited Seminars

Addressing functionally relevant large-scale motions in proteins by molecular-dynamics simulation: The ArtJ case
Xavier Daura, Universitat Autònoma de Barcelona, Spain

Micromanaging cell growth and differentiation
Judy Lieberman, Harvard Medical School, USA

Bioreactor scale-down studies of temperature-inducible recombinant protein production in E. coli
Octavio T. Ramírez

Notes on Influenza A (H1N1) 2009
Francisco George, Direcção Geral de Saúde, Portugal

Novel and useful organic compounds, how do we find them?
Olov Sterner Organic Chemistry, Lund University, Sweden

Biological activities of Z-DNA binding proteins
Alexander Rich, MIT, USA

Novel, single-use bioreactors using a pneumatic mixing mechanism
Brian Lee, PBS Biotech, USA

The madness of King George III and Queen Victoria’s haemophilia - a molecular detective story
Martin Warren, University of Kent, United Kingdom
A peptide recognition event leading to the native fold of E. coli thioredoxin
Javier Santos, University of Buenos Aires, Argentina

Rising to the metabolomics challenge: new LC-MS/MS approaches
Jane Thomas-Oates, University of York, United Kingdom

Mobile DNA and multiple drug resistance in Enterococcus faecalis: How did it come to this?
Kelli Palmer The Schepens Eye Research Institute, Harvard Medical School, USA

Redox proteomics tools for study of redox lesions in proteins
David Sheehan University College Cork, Ireland

Protein glycation and deglycation. A story of protein damage and repair
Maria Veiga-da-Cunha, Université Catholique de Louvain, France

Complexes of macrocyclic ligands with arms containing phosphorus atoms for medicinal chemistry
Přemysl Lubal, Masaryk University, Czech Republic

Compartmentalising enzymes in bacteria
Martin Warren, University of Kent, United Kingdom

Computational design of immunogens to ‘Re-elicit’ neutralizing antibodies
Bill Schief, University of Washington, USA

EMBO - the idea, the achievements and future perspectives
Hermann Bujard Executive Director of the European Molecular Biology Organization (EMBO)

Studying gene functions via tetracycline controlled transcription activation: principles, advances and applications
Hermann Bujard, EMBO

Late transition metal nanoparticles: synthesis and catalytic reactivity in wet medium
Montserrat Gómez Université Paul Sabatier, Toulouse, France

Centrifuge handling
Beckman European Coordinator

The selective cause of an ancient adaptation
Antony Michael Dean, University of Minnesota, USA

Technology transfer for ITQB/IBET
Francisco Pereira do Valle, RAND Project Management

Viral vectors in gene therapy: special emphasis on alphaviruses
Kenneth Lundstrom PanTherapeutics, Lausanne, Switzerland

Expression of GPCRs in drug discovery and structural biology
Kenneth Lundstrom PanTherapeutics, Lausanne, Switzerland

Structural membrane proteomics - Respiratory chain complex I from thermophilic bacteria
Guohong Peng, Max Planck Institut fur Biophysics, Frankfurt, Germany

Mitochondrial targets for chemotherapy
Catherine Brenner-Jan, University Versailles/St Quentin (CNRS UMR 8159), France

Protein glycosylation, LPS, and peptidoglycan: three pathways, many possibilities
Mario F. Feldman, University of Alberta, Edmonton, Alberta, Canada

Genes for drought and salinity tolerance
Rana Munns, CSIRO Division of Plant Industry, Canberra, Australia

Targeting the cell surface molecules responsible for the African sleeping sickness parasite survival and infectivity
João A. Rodrigues, Centre for Malaria & Tropical Diseases-IHMT/UNL, Portugal