



INSTITUTO
DE TECNOLOGIA
QUÍMICA E BIOLÓGICA
ANTÓNIO XAVIER /UNL

Knowledge Creation

Research and Education

who are we



UNIVERSIDADE
NOVA
DE LISBOA

The metropolitan university of Lisbon

Lisbon, Almada, Oeiras and Cascais (future)

40 years old (founded in 1973)

9 academic units

Faculdade de Ciências e Tecnologia

Faculdade de Ciências Sociais e Humanas

Nova School of Business and Economics

Faculdade de Ciências Médicas

Faculdade de Direito

Instituto de Higiene e Medicina Tropical

Instituto Superior de Estatística e Gestão de Informação

Instituto de Tecnologia Química e Biológica

Escola Nacional de Saúde Pública

who are we

ITQB

Academic research institution

Wide scientific culture

Relaxed but challenging atmosphere

Collaborative spirit



where are we

Oeiras, Portugal

15km from Lisboa



our (broad) story

1986

Creation of CTQB (open institution)

1993

Integration in Universidade NOVA de Lisboa

1996

Labs move to new building

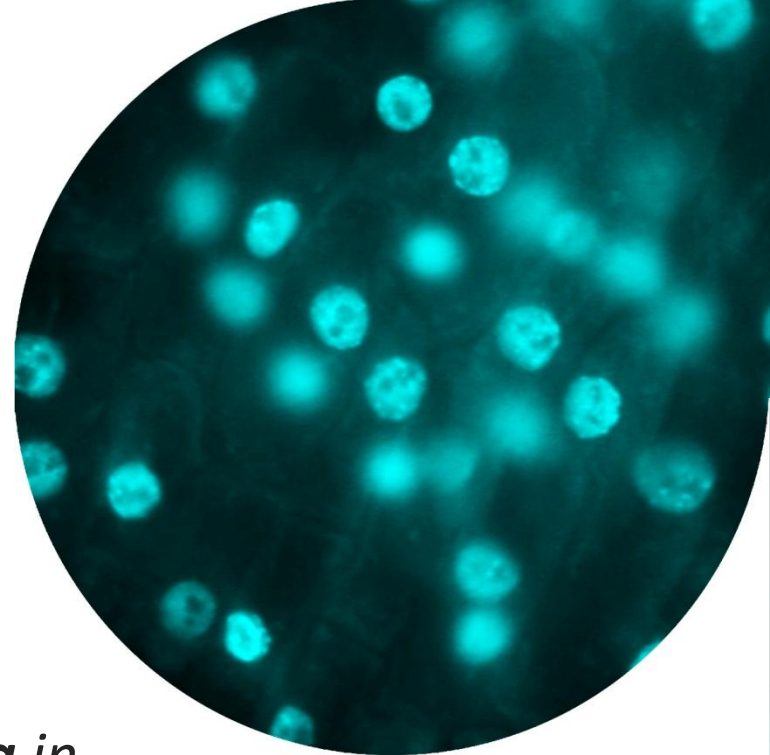
2001

Associate Laboratory Status



our mission

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



what we are now

56

Laboratories

38

PhD Theses
Awarded in 2013

400

Researchers
(includes iBET)

276

WoS Papers
Published in 2013

104

ongoing projects
competitively funded
(6.2 M€)



how we are organized

division of Chemistry

new molecules and processes | chemical biology

division of Biological Chemistry

inner workings of living systems | molecular machines of life

division of Biology

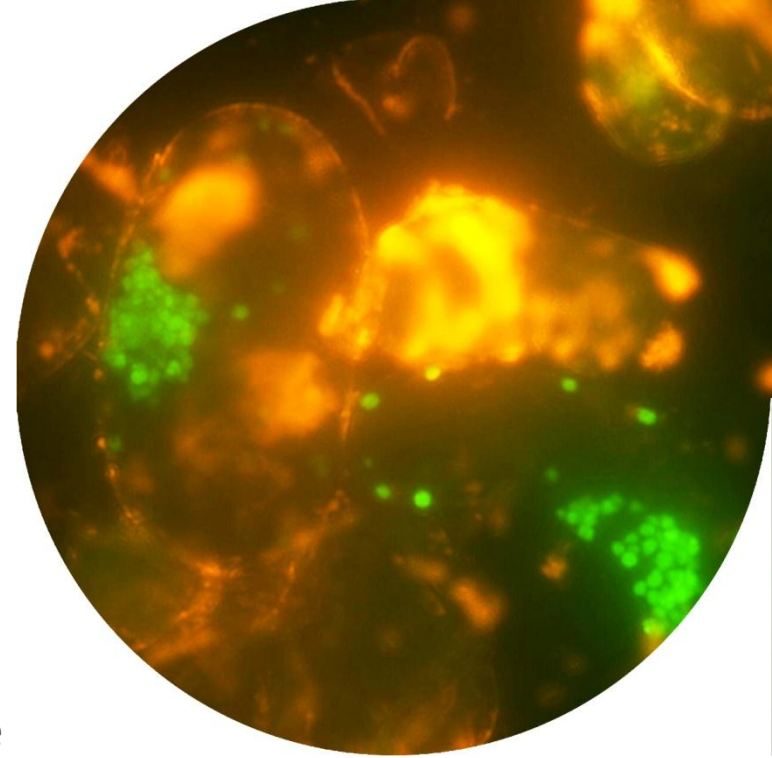
cells and organisms | health and disease

division of Technology

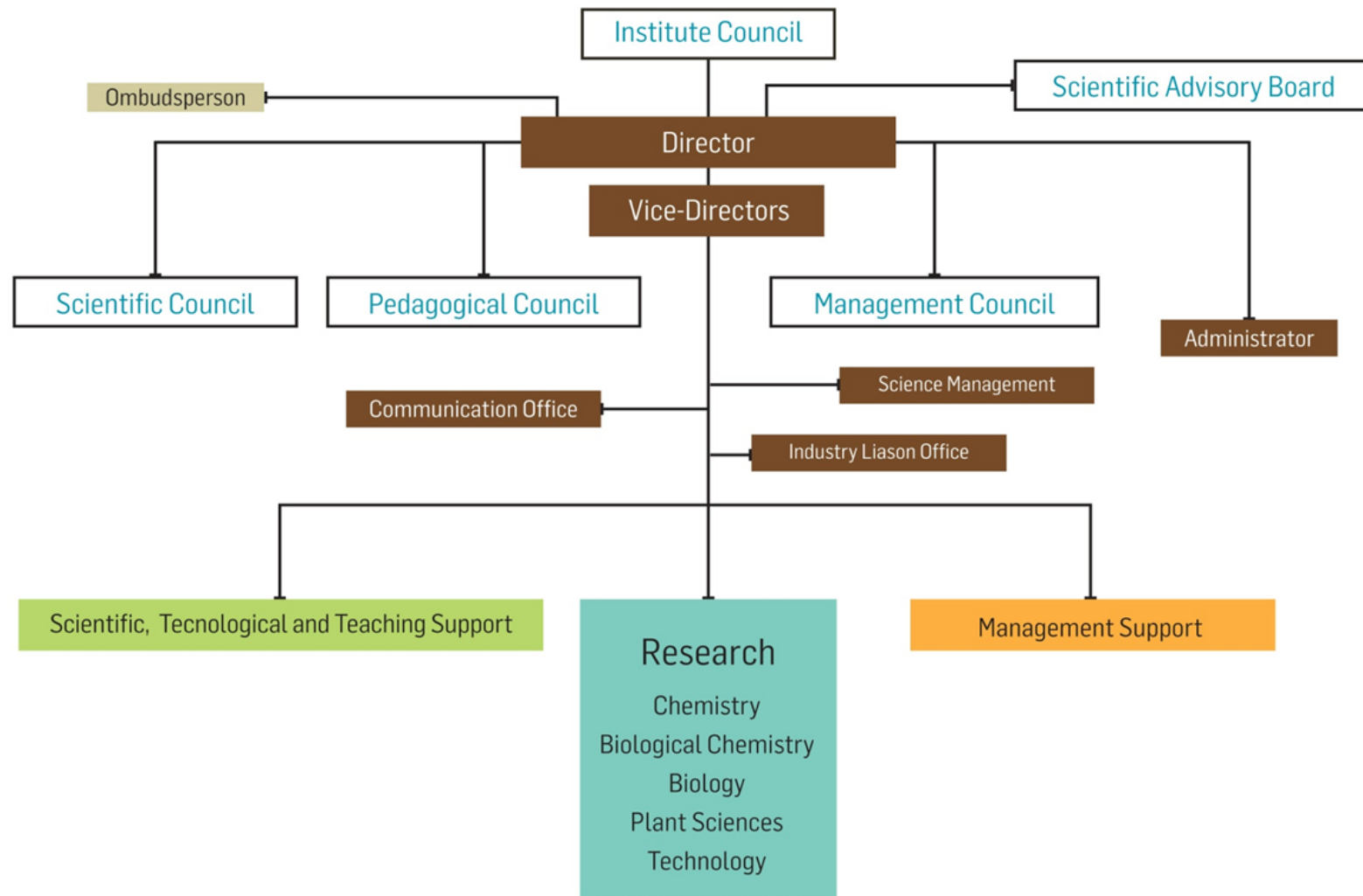
moving science closer to value

division of Plant Sciences

from model organisms to agriculture and forestry



how we are organized



our research areas

Molecular Basis of Health and Disease

Molecular BioSciences

Cellular and Molecular Biology

Molecular and Structural Biology

Biotechnology and Systems Biology

Chemical Biology

**Biological Resources and
Sustainable Development**

our scientists (PIs) Biotech

Luis Paulo Rebelo green chemistry

Inês C. Pereira bioenergy | H-economy

Ricardo Louro bioremediation

Lígia O. Martins enzymes | bio-refineries

Cláudio M. Soares modeling | bioenergy | biocatalysis

Helena Santos food microbiology | protein stabilization

Adriano O. Henriques microbial spores

Pedro Fevereiro plant biotech

Manuel Carrondo red biotech | process scale up

Ana Sofia Coroadinha red biotech | animal cell lines

Paula Alves red biotech | bioprocess development

Teresa Crespo environmental microbiology

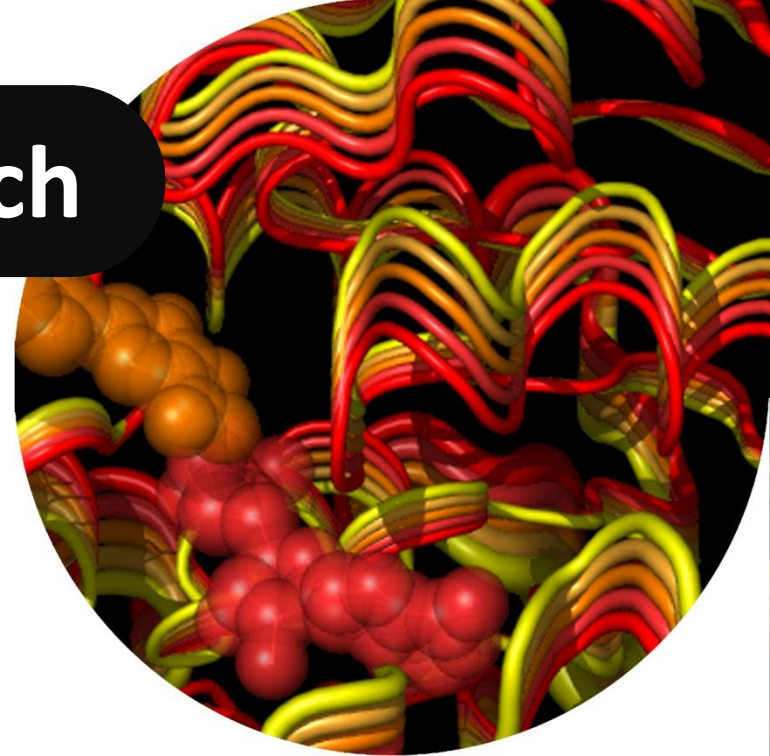
Cândido Pinto Ricardo plant proteomics

Rita Abranches plant biotech

Margarida Oliveira plant breeding

Célia Miguel forest biotech

Ricardo Boavida Ferreira plant metabolomics



our scientists (PIs) Health

Rita Delgado chemical synthesis | radiotherapy and imaging

Rita Ventura / Chris Maycock chemical synthesis | protein stabilization

Carlos Romão chemical synthesis | CO-releasing drugs

Luis Paulo Rebelo ionic liquids | drug delivery

Inês Cardoso Pereira sulphate reducing bacteria

Manolis Matzapetakis Fe-transport in pathogens

Lígia M. Saraiva NO resistance in bacteria

Pedro Matias protein crystallography | drug discovery

Maria Arménia Carrondo protein crystallography | enzyme mechanisms

Collin McVey protein crystallography | virus diseases

Margarida Archer protein crystallography | membrane transporters

Cláudia Rodrigues-Pousada yeast model | metal toxicity

António Baptista molecular simulation | protein folding diseases

Cláudio M. Soares molecular modeling | molecular mechanisms in disease

Frederico Herrera neurodegenerative disorders



our scientists (PIs) Health

Mariana Pinho antibiotic resistance

Sérgio Filipe antibiotic resistance

Hermínia de Lencastre epidemiology of antibiotic resistance

Raquel Sá-Leão epidemiology of antibiotic resistance

Maria Miragaia epidemiology of antibiotic resistance

Karina Xavier Biofilms | Host-pathogen interaction

Cecília Arraiano RNA gene regulation

Pedro Domingos eye model | blindness (RP)

Júlia Costa glycobiology | neurodegenerative disorders

Adriano O. Henriques sporulation of pathogenic bacteria

Rita Abranches production of therapeutics in plant cells

Manuel Carrondo scale up of biopharmaceutical production

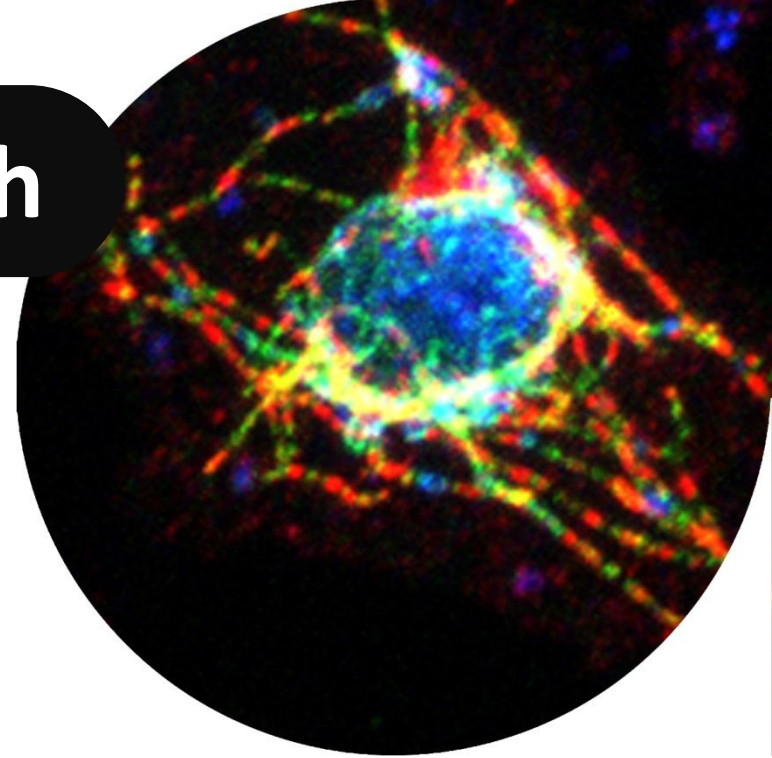
Ana Sofia Coroadinha complex biopharmaceuticals

Paula Alves pre-clinical research | cell therapy

Ana Luísa Simplício pharmacokinetics | biopharmaceutical analysis

Catarina Duarte nutraceuticals

Ana Coelho mass spec | proteomics



our (major) facilities

NMR National Facility (300 up to 800 MHz)

Mass Spectrometry National Facility

Small Molecule X-Ray Crystallography

Greenhouses and Growth Chambers

IBET Pilot Plant (up to 500 L Bioreactors)

GMP and Clean Rooms

ITQB/IBET Analytical Services

Microbiology . Chemical Analysis . Protein Characterization

Good Laboratory Practices (GLP)



how we envisage education



education

A Venn diagram consisting of two overlapping rounded rectangles. The top rectangle is light blue and contains the word 'education'. The bottom rectangle is light green and contains the word 'research'. The two rectangles overlap in the center, creating a darker green area.

research

our courses

PhD Programmes

Molecular Biosciences UNL

Sustainable Chemistry UNL, UP, UA

Cellular Therapy and Regenerative Medicine UNL, UL, UTL

Bioengineering UNL, UTL, UP, UA, UC, MIT

Catalysis and Sustainability IST, UNL

Masters Courses

Medical Microbiology UNL

Science Communication UNL

Biochemistry for Health UNL

Research Training

Post Graduation Courses

Opportunities for Erasmus

Ad-hoc courses



NOVA Doctoral School
Complementary skills

MolBioS PhD Program



Research and innovation

(international collaborations | interface with companies)

Strong expertise in advanced training

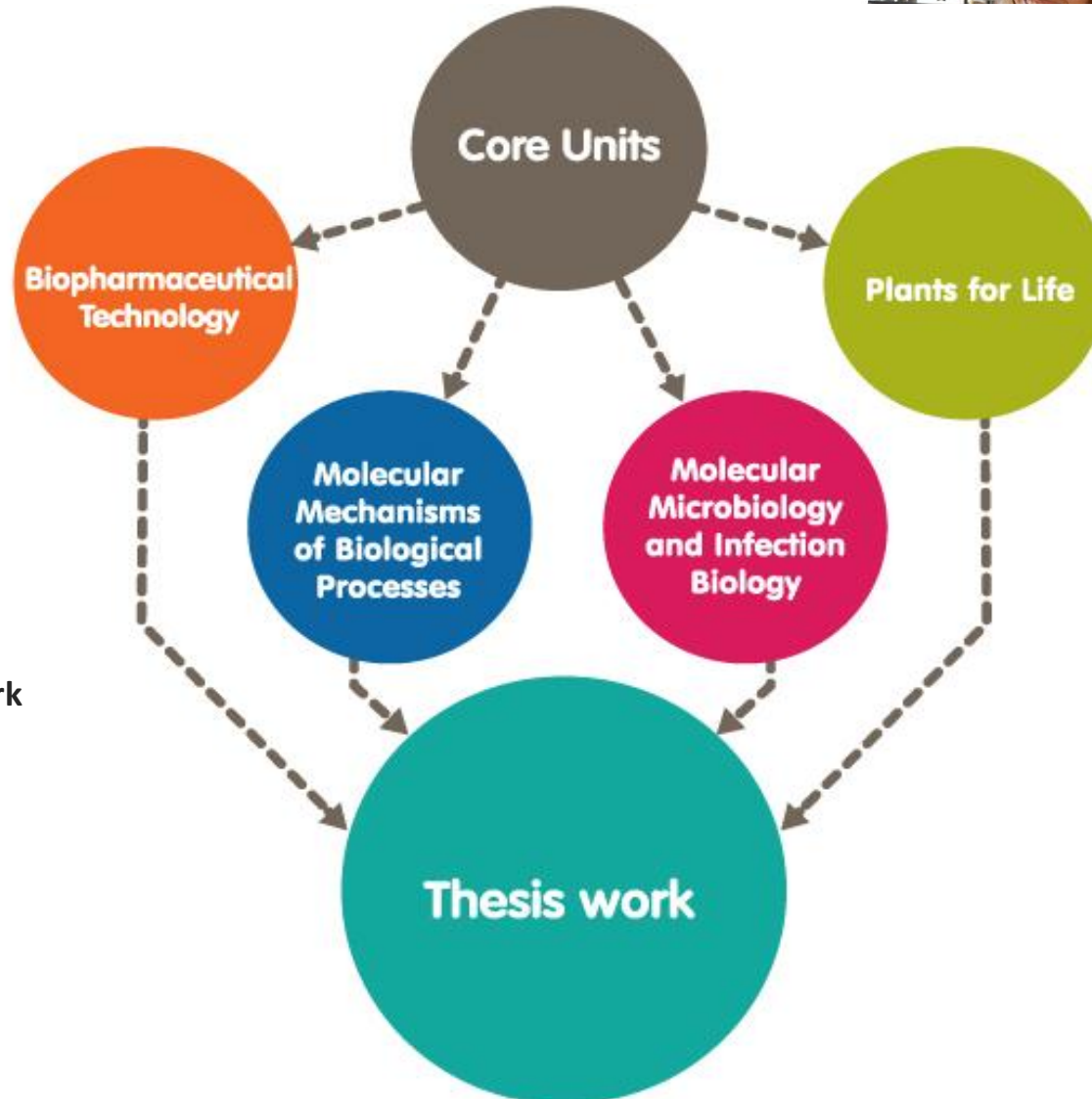
Multidisciplinary training in molecular biosciences

Transversal skills development

FCT-funded | 11 studentships per year



MolBioS PhD Program



30 ECTS Course work
+
210 ECTS Thesis

our links to industry

Start-up companies

Alfama

Biotechnol

Consumo em Verde

Cytothera

ECBIO

ISODER

RAIZ

STAB Vida

OmegaWater

Theraproteins

GeniBET (spin-of)



iBET

Instituto de Biologia
Experimental e Tecnológica

our partners

Laboratório Associado

“from the molecule to the clinical”

ITQB

Universidade NOVA de Lisboa | Research and advanced training | Biology & Chemistry

IGC

Gulbenkian Foundation | Research and training | Developmental Biology and Biomedicine

IBET

Private not for profit | Industry interface | Applied Research | Biotechnology

CEDOC

Universidade NOVA de Lisboa | Center for Chronic Diseases



our role in society

Science Communication

Website | Social Networks | Media

Science outreach activities

Open Day | Debates and demonstrations

Interactions with schools

Highschool visits | Science in the summer

Art & Science

Artistic residences

Ciência Viva partners



itqb = great people

190 PhD holders (includes iBET)

21 staff | 17 other institutions | 43 term contracts | 104 post-docs

150 PhD students

96 graduates (BI)

30 trainees (master students)

80 Support Staff administrative | technical | scientific

Visiting scientists 50 invited lecturers per year



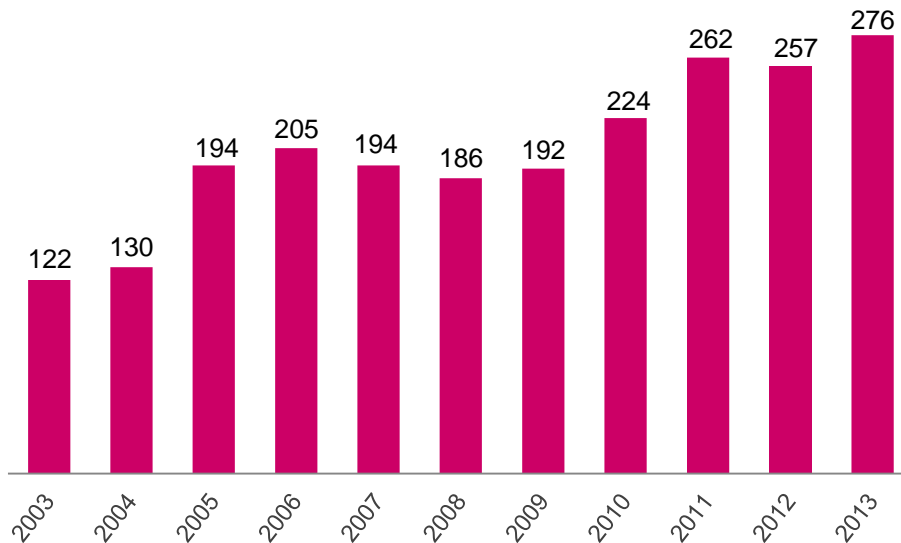
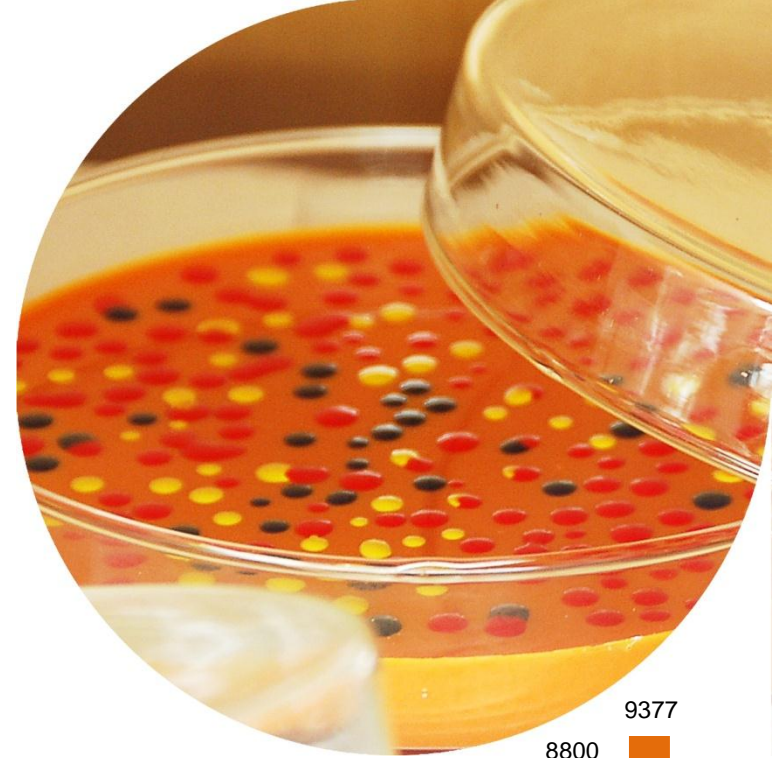
itqb = top research

3,166 total papers (since 1990)

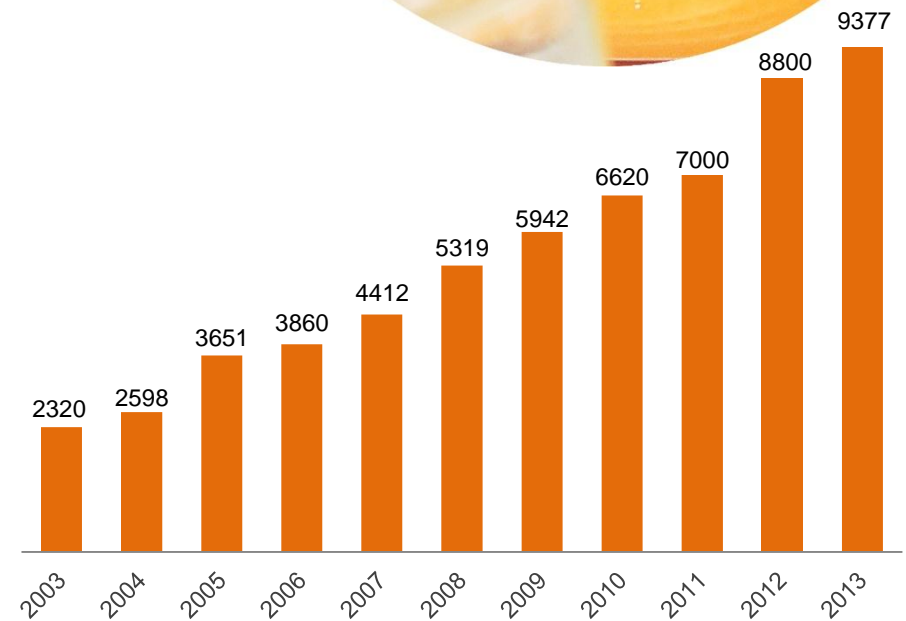
70,584 total citations (since 1990)

29 average citations/paper

39 Highly Cited Papers in 2013



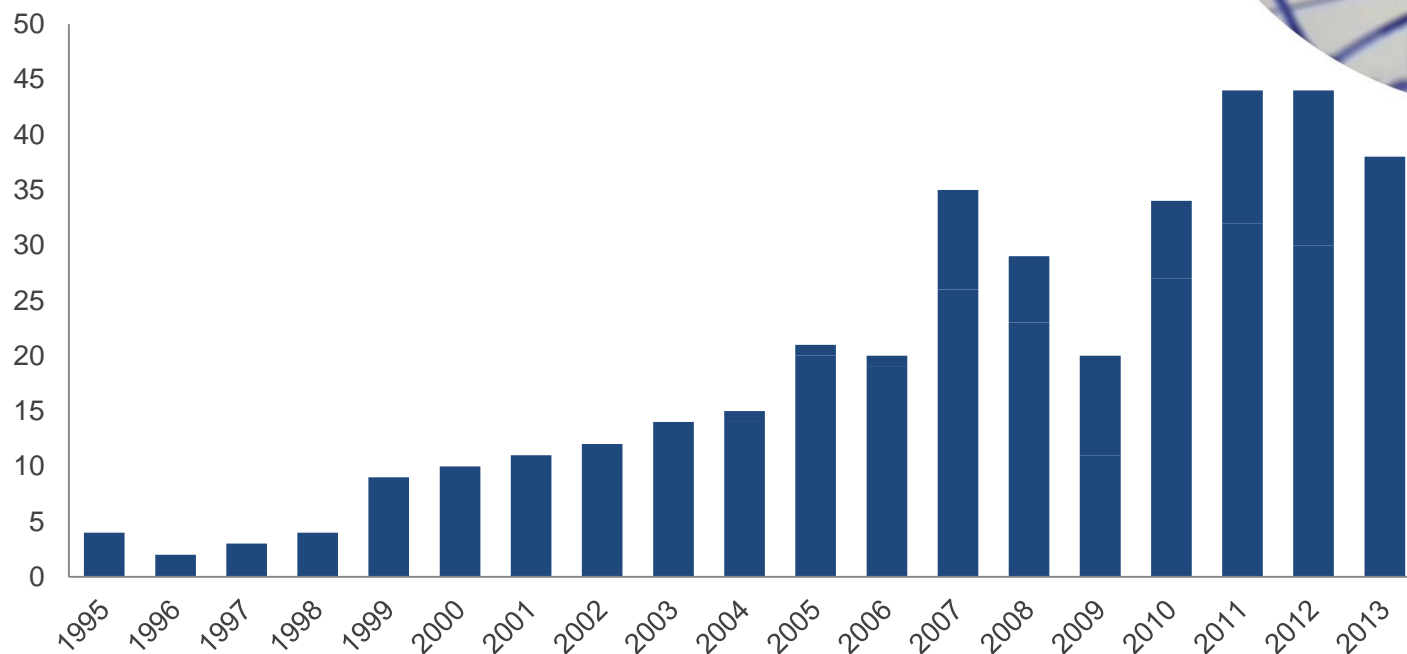
papers (WoS)



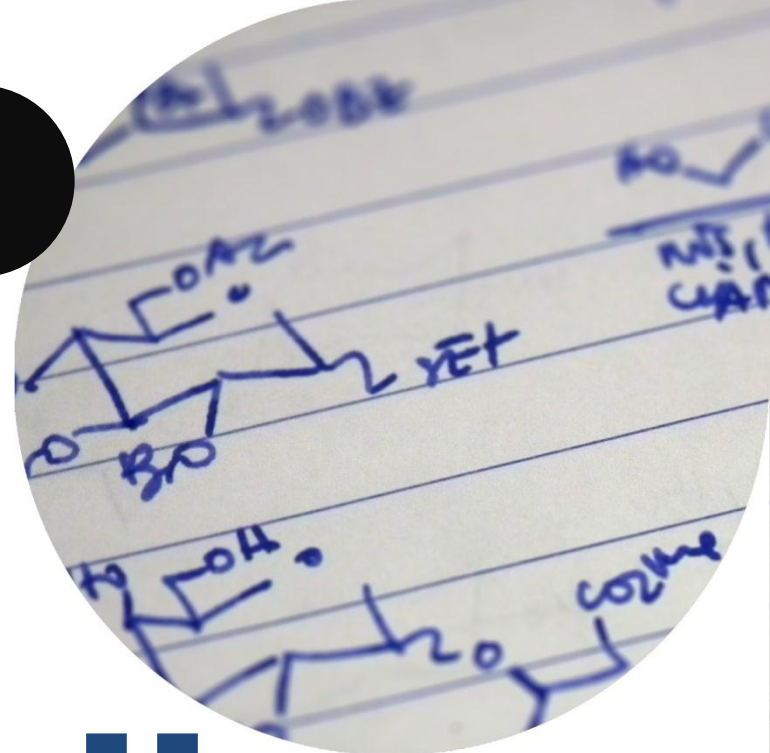
citations

itqb = excellent students

369 PhD theses awarded (1995-2013)



PhD theses awarded at itqb



itqb = competitive funding



Funding 2012

Total budget

15,6 M€
(13,4 M€ + 2,2 M€)

Research Projects
30%

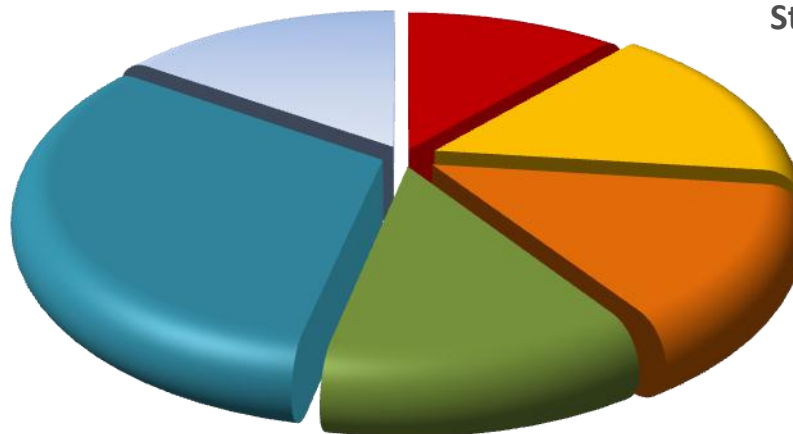
Individual Grants
14%

Others
12%

State Budget
16%

Laboratório Associado
15%

Programa Ciência
13%



itqb and the world



Thank you

instituto de tecnologia química e biológica antónio xavier

www.itqb.unl.pt

