

MASTER'S PROGRAM IN BIOTECHNOLOGY - THESES 2018/19 and 2017/18

Institutions/departments and acronyms

Allmicroalgae – Natural Products

Bayer

Biopremier - BPMR

Champalimaud Centre for the Unknown

CiiEM - Centro de Investigação Interdisciplinar Egas Moniz, Instituto Universitário Egas Moniz

DCM - Departamento de Ciência dos Materiais da FCT NOVA

DCSA - Departamento de Ciências Sociais Aplicadas da FCT NOVA

DCTB - Departamento de Ciências e Tecnologia da Biomassa da FCT NOVA

DCV - Departamento de Ciências da Vida da FCT NOVA

DQ - Departamento de Química da FCT NOVA

EPS - Energy Pulse Systems

FCT NOVA - Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa

iBET - Instituto de Biologia Experimental e Tecnológica

iMM - Instituto de Medicina Molecular João Lobo Antunes

INESC - Instituto de Engenharia de Sistemas e Computadores do Instituto Superior Técnico

INSA - Instituto Nacional de Saúde Doutor Ricardo Jorge

Ism2 - Institut des Sciences Moléculaires de Marseille

ITQB NOVA - Instituto de Tecnologia Química e Biológica António Xavier

NOVA Medical School - Faculdade de Ciências Médicas

Vrije Universiteit Brussel

In 2018/19 and 2017/18, 32% of the students selected DQ to carry out their thesis work, and 32% selected iBET. The remainder 36% were dispersed among several institutions/departments.

Academic year 2018/19

Expression, purification and characterization of a protein isoform involved in cyclic nucleotide signaling in humans

iBET and Bayer

Advisors: Lúgia Nobre (iBET) and Peter Sandner (Bayer)

Optimization of PCR microfluidic conditions for DNA amplification of gene associated with prostate cancer

DCV

Advisor: Pedro Viana Baptista

Advanced cell-based biosensors for detection of label-free viral pathogens

iBET

Advisor: Ana Sofia Coroadinha

Assessment of the cellular effects of ingested titanium dioxide nanomaterials in intestinal cells

INSA

Advisor: Henriqueta Louro

Design of a novel phage display vector to improve enrichment of phages with antigen-specific Nanobodies and to identify the Nanobody clones of highest affinity

Cellular and Molecular Immunology, Vrije Universiteit Brussel

Advisor: Serge Muyldermans

Desenvolvimento de substratos biopoliméricos para crescimento de derme reconstruída

DQ and ITQB NOVA

Advisors: Filomena Freitas (DQ) and Abel Oliva (ITQB NOVA)

Fitodepuração de efluentes contaminados obtidos em processos de carbonização hidrotermal

DCTB

Advisors: Ana Luísa Fernando and Margarida Gonçalves

Production of antibiotics and biopolymer by the bacterium *Pseudomonas chlororaphis* using glycerol

DQ

Advisors: Cristiana Torres and Bárbara Almeida

Evolução dirigida com vista à optimização de fermentações de sumos de fruta

DCV and CiiEM

Advisors: Paula Gonçalves (DCV) and Madalena Salema-Oom (CiiEM)

Green synthesis route to Copper and Iron nanoparticles

DQ

Advisors: Pedro Tavares and Alice Pereira

Development of antibodies against the Notch pathway ligand JAG1 using phage display technology

iBET

Advisors: Ana Barbas and Gabriela Silva

Protein based gas-sensing materials for detection of fish deterioration

DQ

Advisor: Cecília Roque

Production of natural elastomers (mcl-PHA) from sugar-rich substrates obtained through hot compressed water hydrolysis of grape pomace

DQ

Advisors: Filomena Freitas and Alexandre Paiva

Heterotrophic growth of microalgae strains – screening, optimization and scale-up

Allmicroalgae - Natural Products

Advisors: Joana Gabriela Laranjeira da Silva and Hugo Pereira Galvão

Chimeric lentiviral vectors for gene therapy

iBET

Advisor: Ana Sofia Coroadinha

PHAs from mixed cultures as biopolymers for biodegradable films and flowerpots for plant transport

DQ

Advisors: Maria Ascensão Reis and Anouk Duque

Bioethanol production by Enterobacter A47: proof-of-concept

DQ

Advisor: Cristiana Torres

Monitoring cell cultures in real time in a biochip

INESC

Advisor: João Pedro Conde

Developing and improving purification strategies for biopharmaceuticals

iBET

Advisors: Cristina Peixoto and Ricardo Silva

Fermentação do bagaço de uva branca por *S. bombicola* para produção de soforolípidos

CiiEM and DQ

Advisors: Madalena Salema-Oom (CiiEM) and Susana Barreiros (DQ)

Production of xylitol by the yeast *Komagataella pastoris*

DQ

Advisor: Maria Ascensão Reis

Extraction of cannabis seed oil using supercritical CO₂ and evaluation of its bioactivity

DQ

Advisor: Alexandre Paiva

Academic year 2017/18

Valorization of brewery waste through polyhydroxyalkanoates production

DQ

Advisors: Anouk Duque and Mónica Carvalheira

Development of biopolymer-based anti-microbial membranes

DQ

Advisors: Filomena Freitas and Luísa Neves

Fermented agricultural wastes as feedstock for PHA production with photosynthetic mixed cultures operated under a permanent feast regime

DQ

Advisors: Joana Fradinho and Maria Ascensão Reis

Cloning of FUT8 gene and characterization of its expression in human cell lines

DCV

Advisors: Paula Videira and Margarida Castro Caldas

Design and synthesis of small protein-based scaffolds for bioengineering applications

DQ and lsm2

Advisors: Cecília Roque (DQ) and Olga Iranzo (lsm2)

Genotyping circulating tumor DNA for Precision Oncology

iMM and DCSA

Advisors: Maria Carmo-Fonseca (iMM) and Fernanda Llusa (DCSA)

Unveiling human Cardiac Stem Cells role in myocardial ischemia-reperfusion injury

iBET

Advisors: Margarida Serra and Patrícia Gomes-Alves

Bioprocess engineering of insect cells for next generation of Influenza vaccines

iBET

Advisors: Antonio Roldão and Inês Isidro

Development of curcumin lipid formulations for food applications: transport, permeability and safety evaluation on a mucus-secreting intestinal epithelial cell model

iBET

Advisors: Ana Matias and Vanessa Gonçalves

Functionalization of recombinant proteins for matrix conjugation in a bifunctional bacterial infection biosensor

DCV

Advisors: Rita Sobral and Inês Grilo

pH and Photoresponsive Soft Materials for Biological applications

iBET

Advisor: Margarida Serra

Can polyphenols metabolites ameliorate the outcome of DR?

NOVA Medical School

Advisor: Gabriela Silva and Daniela Santos

Novel Alginate-Chitosan aerogel fibres for potential wound healing applications

iBET

Advisors: Vanessa Gonçalves and Frédéric Gaspar

Depicting the Tumor-Associated Macrophage phenotype employing 3D breast cancer cell models

iBET

Advisors: Catarina Brito and Sofia Rebelo

Production of xylitol by the yeast *Komagataella pastoris*

DQ

Advisor: Filomena Freitas

Engineering Cardiac Tissue Using Human Induced Pluripotent Stem Cell Derivatives

iBET

Advisor: Margarida Serra

The effect of CCBE1 in hPSC differentiation towards cardiac lineage

iBET

Advisors: Margarida Serra and Patrícia Gomes-Alves

EGFR glycosylation in cancer

iBET

Advisors: Patrícia Gomes-Alves and Lara Marcos da Silva

Impact of the metabolic program of germline cells in feeding behavior

Champalimaud Centre for the Unknown, Neuroscience Programme

Advisors: Carlos Ribeiro and Zita Santos

Selective platelet activation by pulsed electric fields for stem cell culture

iBET and EPS

Advisors: Vítor Espírito Santo (iBET) and Luis Redondo (EPS)

Nature based peptide hydrogels as enzyme mimetics

DQ

Advisors: Ana Sofia Pina and Cecília Roque

Technology-market transfer plan of food and environmental analysis kits

DCSA and Biopremier - BPMR

Advisors: Fernanda Llusa (DCSA) and Joana Raquel Freitas Dias da Silva (Biopremier - BPMR)

Regulation of T cell fitness and function in the tumour microenvironment

iMM

Advisors: Karine Serre and Sofia Mensurado