



BIOPHARMACEUTICAL SCIENCES

MASTER DEGREE

Universidade de Lisboa • Faculty of Pharmacy

15TH EDITION
2024 • 25

PRESENTATION

This course goes beyond the classical concept of biopharmaceutical sciences to provide a comprehensive understanding of the discovery phase of the drug development process. With a multidisciplinary approach, you will explore the molecular mechanisms of disease, potential biomarkers, therapeutic targets and cutting-edge therapeutic strategies. Expert staff will guide you through real-world scenarios, challenging you to think critically, and interact closely with R&D Units in academia and outside, including international renowned institutions. Through this program, you will gain hands-on experience in the discovery phase of drug development, preparing you for a career in this exciting and rapidly evolving field. Join us and discover the latest advancements in biopharmaceutical sciences. Become part of a community of driven, passionate individuals who are committed to improving the health and well-being of people around the world.

COORDINATOR

Cecilia M. P. Rodrigues

SCIENTIFIC COMMITTEE

Cecilia M. P. Rodrigues, Graça Soveral, Madalena Pimentel,
Maria Alexandra Brito

OBJECTIVES

This course offers an exciting opportunity to learn from top academic and industry experts in the field. Through practical courses and cutting-edge topics, you will gain the skills and knowledge needed to discover innovative biomarkers, targets, and therapeutic strategies for diagnosing and treating human diseases. This course is designed for ambitious graduates who want to pursue a career in universities, research institutes, pharmaceutical companies, or biotechs. Whether you are looking to advance your education towards a PhD degree or start your career in pharma and biotech, this course will provide you with the advanced training and practical experience needed to succeed as a biopharmaceutical innovator. Join us and be part of a community of like-minded individuals who are passionate about advancing biopharmaceutical sciences and improving human health.

EMPLOYABILITY

DATA 2018–21

46% •

Academia

15%

Others

39%

Industry

13%

Faculty
of Pharmacy

Academia

• • 87%

Other
Institutions

• PhD Students **33%**
Research Fellows **13%**

• • Portugal **70%**
Abroad **17%**

REQUIREMENTS

Students and professionals with BSc in areas of Health Sciences, Life Sciences or Biotechnologies, or with recognised curriculum vitae in other fields.

SELECTION

- 1 Certificate of BSc or equivalent, with final grade;
- 2 Curriculum vitae;
- 3 Motivation letter and interview, if needed.

Maximum 32 students will be selected

APPLICATIONS

1st call 1 May - 16 June, 2024

Publication of results
21 June, 2024

2nd call 1 - 26 July, 2024

Publication of results
31 July, 2024

3rd call 16 - 31 August, 2024

Publication of results
6 September, 2024

REGISTRATION

1st call 25 - 26 June, 2024

2nd call 6 - 7 August, 2024

3rd call 12 - 13 September, 2024

TUITION FEES

National students € 3.250

year 1 € 1.500
year 2 € 1.750

International students € 7.000

year 1 € 3.250
year 2 € 3.750

Application € 75

Registration € 75

CALENDAR

Beginning of classes
16 September, 2024

Monday thru Friday
17h00 - 20h00

COURSES & CONTENTS

STUDY PLAN

4 SEMESTERS | 120 ECTS

- Elective curricular units – select 24 credits. The 6 curricular units/ semester selected by more students will be given in each year.
- • Curricular unit within other scientific areas offered by Universidade de Lisboa, through internal mobility, such as Entrepreneurship and Innovation, Bioethics, etc.

YEAR 1	1 st Semester		
	Elective •		ECTS
	ECTS Advanced Therapies and Regenerative Medicine		4
	Brain Barriers in Drug Development		4
	Cell Signalling		4
	Development and Organization of the Nervous System		4
	Eukaryotic Gene Regulation		4
	Human Molecular Genetics		4
	Membrane Channels and Transporters		4
	Metabolic Biochemistry		4
	Molecular Genetics of Bacteria		4
	Proteostasis and Therapeutic Development		4
	Other Curricular Unit I • •		4
	Mandatory		
	Scientific Writing and Communication		6
YEAR 2	3 rd Semester		
			ECTS
	Seminars		2
	Dissertation		28

YEAR 1	2 nd Semester		
	Elective •		ECTS
	Biopharmaceutics and Pharmacokinetics		4
	Cellular Microbiology		4
	Data Science in Pharmaceutical Sciences and Medicines		4
	Emerging Infections of Viral Etiology		4
	Methodologies of Data Analysis		4
	Neuropathology and Neuropharmacology		4
	Oncobiology and Stem Cell Biology		4
	Pathophysiology of Neuroinflammation		4
	Pharmacogenetics		4
	Research and Development of Biopharmaceuticals		4
	Other Curricular Unit II • •		4
	Mandatory		
	Experimental Design in Research and Innovation		6
YEAR 2	4 th Semester		
			ECTS
	Dissertation		30

ADVANCED THERAPIES & REGENERATIVE MEDICINE

The use of stem cells in advanced therapies and regenerative medicine is thriving. Pharmaceutical companies are increasingly investing in stem cell technology to develop innovative and potentially valuable new treatments for severe human diseases. This Unit will cover core concepts in stem cell technologies, regulation and clinical application, revealing seminal advances of stem cell-based advanced treatments. It will also train students with the knowledge necessary to understand innovative treatments to accelerate and improve the successful transfer of stem cell-based discoveries from the bench to the bedside. The aims are to: 1) provide an understanding of the role of stem cell technologies in tissue homeostasis and regeneration; 2) guide students to discuss the potential of stem cells in biomedical research and the challenges of developing better stem cell-based therapies in regenerative medicine; 3) give insights into cutting-edge stem cell tools and models to tackle human disease; 4) provide an understanding of how pharmacology, toxicology and biomedical applications benefit from emerging scale-up stem cell technologies.

COORDINATOR

Susana Solá

Joana Miranda, Rui Eduardo Mota Castro,
André Simão, Sérgio Camões

BIOPHARMACEUTICS & PHARMACOKINETICS

Description and quantitation of factors affecting the absorption, distribution, metabolism and excretion (ADME) of drugs. Development of appropriate dosage regimens and graphical analysis of drug concentration data sets. Bioequivalence and drug product testing. Application of biopharmaceutical and pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients.

COORDINATOR

Maria Rosário Brito Correia Lobato

Nuno Miguel Elvas Neves Silva, Paulo Jorge Pereira Alves Paixão

BRAIN BARRIERS IN DRUG DEVELOPMENT

Brain barriers are complex and dynamic structures that protect the nervous tissue against the entrance of toxic substances. However, the restricted permeability and selectively limits entry of drugs into the central nervous system (CNS), which constitutes an obstacle to therapy. This course presents the current state of knowledge regarding the following aspects: blood brain barrier (BBB) as a protective interface, its constitution and properties; functional interaction between cells and molecules of the nervous tissue and concept of neurovascular unit; structural and functional changes of the BBB in pathological situations and role of the BBB as a cause or consequence of neurological damage; in silico, in vitro, ex vivo and in vivo models to study BBB; in silico evaluation of the BBB transposition by drugs; development of drugs for the treatment of CNS disorders and therapeutic strategies to overcome the BBB; other barriers: blood-retinal barrier and blood-cerebro-spinal fluid barrier.

COORDINATOR

Maria Alexandra de Oliveira Silva Braga Pedreira de Brito

CO-COORDINATOR

Rui Fernando Marques da Silva

Ana Rita Mendonça Vaz Botelho

CELL SIGNALLING

This Unit will explore how cells integrate signals from multiple stimuli to mount appropriate physiological responses. You will learn about the intracellular signalling pathways that transmit these signals to specific targets within the cell. These pathways control the fidelity of signal transmission and tightly regulate the crosstalk between them. Through engaging lectures and hands-on activities, you will gain an understanding of how key signalling pathways regulate gene expression and cellular processes such as growth and death. Moreover, you will discover how disruption of these pathways can lead to diseases such as cancer and neurodegenerative disorders. By understanding how signalling pathways contribute to disease processes, you may inspire the identification of biomarkers and targets for drug discovery programs. Through this Unit, you will develop critical thinking skills and the ability to discuss relevant scientific literature. You will be equipped with the knowledge and skills to understand the relevance of cell signalling in various physiological and pathological situations and in disease treatment.

COORDINATOR

Cecília Maria Pereira Rodrigues

CO-COORDINATOR

Marta Bento Afonso

André Fernando Anastácio dos Santos,
Joana São José Dias Amaral, Rui Eduardo Mota Castro

CELLULAR MICROBIOLOGY

This course details the host-pathogen cell biology. Cell cytoskeleton and extracellular matrix, cell-cell junctions, cell signalling, endocytosis and cell trafficking and mechanisms of programmed cell death. Mechanisms of bacterial adhesion. Adherence and tropism. Signalling. Mechanisms of bacterial invasion into host. Avoidance of intracellular killing. Interaction of bacteria with the endocytic pathway, membrane trafficking and phagocytosis. Interaction of pathogens with the innate and adaptive Immune system. Manipulation of programmed cell death by pathogens. Bacterial toxins as tools in cell biology. This program will present the tools and methodologies to follow cellular components and study phenomena of host interaction with microorganisms, as well as potential therapeutic targets to control infection and inflammatory processes.

COORDINATOR

Elsa Maria Ribeiro dos Santos Anes

Jorge Manuel Barreto Vitor,
José Miguel Azevedo Pereira

DATA SCIENCE IN PHARMACEUTICAL SCIENCES & MEDICINES

This Unit provides students with the necessary knowledge to apply data science to real cases of target and drug discovery, as well as with skills to interpret data autonomously. This involves guiding students through the use of already available cohort datasets and online databases, as well as data mining techniques. These tools are an excellent starting point for generating preliminary data and establishing hypotheses, which are essential steps in the drug discovery process. To further enhance their data analysis skills, students will also learn how to communicate their findings through the use of graph production and statistical analysis programs. This will enable them to effectively convey their research results to colleagues, collaborators, and stakeholders. These skills are increasingly in demand in both academic and non-academic settings, where data-driven decision making is becoming more prevalent. By the end of the course, students will have the necessary skills to independently analyse and interpret complex datasets, generate meaningful insights, and communicate their findings effectively. These skills are highly transferable and will be valuable in a wide range of research and industry settings.

COORDINATOR

Tiago Rodrigues

CO-COORDINATOR

André Santos

Pedro Perdigão, Rita Guedes,
Vanda Marques

DEVELOPMENT & ORGANIZATION OF THE NERVOUS SYSTEM

Neurogenesis: neurulation, formation of the neural tube, differentiation and cell diversity, cell lineages and genetic dependence, neuronal migration. Neural stem cells: embryonic and adult. Anatomy of the Central Nervous System (CNS): divisions and subdivisions; general structure of the brain and spinal cord; meninges and brain ventricles. Histology of the CNS: cell types, their structure and functionality. Neurons: structure and function; cell body and neurites; morphological and functional classification; compartments and functional domains, protein synthesis. Cytoskeleton, neuropeptides, classical and unconventional neurotransmitters; axonal transport, motor proteins. Structure and function of glial cells: astrocytes, oligodendrocytes, microglia and ependymal cells. Organization of the central nervous tissues.

COORDINATOR

Rui Fernando Marques da Silva

CO-COORDINATOR

Maria Alexandra de Oliveira Silva Braga Pedreira de Brito

Adelaide Maria Afonso Fernandes Borralho, Ana Rita Mendonça
Vaz Botelho, Andreia Pereira Barateiro Macedo

EUKARYOTIC GENE REGULATION

Studies the molecular mechanisms that regulate eukaryotic gene expression, and whole-genome and global eukaryotic gene expression analyses. Emphasis will be put on transcription/transcription factors as suitable targets for therapeutic drugs. The important interplay between the transcription machinery and chromatin will be addressed in line with the basic principles of epigenetics as an additional layer of transcriptional control. The role of epigenetic mechanisms in normal development and human disease will be explored. Functional genomics constitutes the second main theme, including analytical experimental methodology used in transcriptomics.

COORDINATOR

Maria João Carlos da Silva Gama

Elsa Margarida Teixeira Rodrigues, Maria João de Jesus Nunes,
Andreia Margarida Gonçalves das Neves Carvalho,
Maria João de Jesus Nunes

EXPERIMENTAL DESIGN IN RESEARCH & INNOVATION

This Unit consists of a period of direct contact of the student with scientific areas of interest, within the scope of the program contents of the Master Course in Biopharmaceutical Sciences. This is followed by the design of an experimental research essay, under the supervision of the tutor. The programme includes the study of:

- 1) principles and methods of selection of research topics, as well as research processes based on critical and creative thinking;
- 2) planning and implementation of research and innovation design; ethics in experimental design;
- 3) approaches to collection, analysis and validation of experimental data; and
- 4) dissemination and presentation of the experimental design; content organization; standards for writing and editing.

It includes theoretical and practical knowledge on how to write a piece of work with emphasis on experimental research, how to apply concepts of experimental design, how to recognise and use advanced research methodologies, always prioritizing the key component of motivating students to equate and solve problems.

COORDINATOR

Cecília Maria Pereira Rodrigues

All teaching staff members

EMERGING INFECTIONS OF VIRAL ETIOLOGY

The number of viral infections that have appeared in recent decades has steadily increased, leading invariably to situations of high morbidity and mortality in the human species. These emerging infections of viral origin are the result of a combination of factors dictated by the characteristics of the infectious agent and its natural host, as well as the transmission mechanisms determined by the way humans and this natural host interact. This Unit intends to explore the strategies to identify and control the emergence of new infections as well as to identify the characteristics inherent to the emerging viruses that allow their adaptation to the human species. In this context, emphasis will be given to the dynamics underlying the change in the interface between human habitats and the natural hosts of the virus.

COORDINATOR

Helena Rebelo de Andrade

CO-COORDINATOR

José Miguel Azevedo Pereira

HUMAN MOLECULAR GENETICS

Theoretical lessons include topics such as the human genome: structure, organization and control of gene expression; origin of genetic variation: mechanisms underlying genome alteration and their consequences; patterns of inheritance: mendelian and complex; molecular pathology and genotype-phenotype correlation; molecular diagnosis: genetic tests in individuals and populations; new approaches to treating genetic diseases. Practical classes include analytical strategies for studying different types of pathology; evaluation of gene expression at transcriptional and translational levels; identification of mutations and characterization by sequence analysis; use of bioinformatics tools for experimental design and data interpretation. Laboratory classes will train on isolation and purification of nucleic acids from different types of biological samples; methods for mutation screening; methods for targeted mutation search.

COORDINATOR

Isabel Maria Antolin Martins de Carvalho

Jorge Manuel Barreto Vitor

MEMBRANE CHANNELS & TRANSPORTERS

Biologic membranes are essential to cell function. Disorders of membrane structure, dysfunction of membrane proteins and cell compartmentalization may have serious consequences for living cells and have been related with several diseases. Knowledge on structure and function of biological membranes and transport systems is essential for developing new methods for diagnostic, drug design and novel therapeutic approaches. Subjects to be discussed include: biomembranes, structure and composition; biophysical bases of membrane transport; chemio-osmotic transduction and transport systems – transporters (symport and antiport transport systems), channels and active transport systems (pumps); ABC transporters and multiple drug resistance; transepithelial transport, the kidney as an osmoregulatory organ; intestinal nutrient and drug uptake.

COORDINATOR

Maria da Graça Tavares Rebelo de Soveral Rodrigues

Inês Margarida Vieira da Silva

METABOLIC BIOCHEMISTRY

This Unit will focus on the relevance of human metabolism as the basis for the advanced study of disease mechanisms and drug actions. Biochemical processes and homeostasis: fluxes through catabolic and anabolic pathways. Mechanisms of activation/inhibition and enzyme catalysis. Nexus with regulation of gene expression and epigenetics. Metabolic pathways underlying the study of pathogenesis, from rare to common diseases. The inherited metabolic disorders involving amino acid and nitrogen metabolism, fatty acids and carbohydrates. Function and dysfunction of mitochondrial fatty acid beta-oxidation and oxidative phosphorylation in cellular energy metabolism. Mitochondrial alterations in cancer cells. Metabolic interactions and cross-links with xenobiotics and pharmacological or toxicological mechanisms. Therapeutic targets, drug metabolism and drug metabolizing enzymes. Laboratory course content is focused on the application of mass spectrometry- based analytical techniques to specific problems in metabolomics and proteomics. Characterization of biomarkers for the diagnosis and research in health and disease.

COORDINATOR

Margarida Maria Fernandes Baptista e Silva

Maria Rita Mouzinho de Albuquerque Azevedo e Castro

METHODOLOGIES OF DATA ANALYSIS

Random variables and probability models. Preliminary data analysis. Parametric statistical inference. Analysis of variance and design of experiments. Nonparametric statistics. Regression analysis. Statistical quality control. Special topics: sampling, multivariate data analysis.

COORDINATOR

Maria Isabel Calisto Frade Barão

MOLECULAR GENETICS OF BACTERIA

This Unit centers on the most relevant aspects of bacterial genetics, namely on the mechanisms underlying the regulation of gene expression and how gene manipulation leads to the understanding of gene function. The development of novel tools to study gene function or to design new therapies are hallmarks of Bacterial Genetics, leading to applications in microbiology, genetics, biochemistry, bioengineering, medicine, molecular biology and biotechnology. We will cover: historical perspective of bacterial molecular genetics and key contributions for the development of Molecular Biology; genetic elements involved in horizontal gene transfer (bacteriophages, plasmids, transposons) and their exploitation as molecular tools; technologies for genetic manipulation (e.g. CRISPR, recombineering, integrative vectors); bio-informatics tools for gene identification and prediction of gene function; molecular genetic analyses; molecular cloning and gene expression vectors; applications in the discovery of new therapeutic targets and agents. Laboratorial teaching includes models of study chosen from ongoing research topics, such as isolation and analysis of mutants, cloning and expression of proteins with therapeutic potential; recombineering; gene functional analysis.

COORDINATOR

Madalena Maria Pimentel

CO-COORDINATOR

Carlos Jorge Sousa de São-José

NEUROPATHOLOGY & NEUROPHARMACOLOGY

Neurological impairment and neurodegeneration in central nervous system disorders. Neurodegeneration mechanisms: role of oxidative stress, excitotoxicity, and cell death pathways. Neuritic development and synaptic plasticity alterations. Susceptibility of various cell types to neurodegeneration induced by various insults. Brain pathology: neurodegenerative diseases and tumours. Behavioural toxicology. Neuromodulation by pharmacological agents. Computational approaches for biomarker discovery, target identification and drug design.

COORDINATOR

Maria Alexandra de Oliveira Silva Braga Pedreira de Brito

CO-COORDINATOR

Adelaide Maria Afonso Fernandes Borralho

Ana Rita Mendonça Vaz Botelho, Rui Fernando Marques da Silva, Andreia Pereira Barateiro Macedo

ONCOBIOLOGY & STEM CELL BIOLOGY

This Unit will dive into the exciting knowledge of cell specification, migration, proliferation, and death - the key cellular and molecular mechanisms that underlie cancer onset and development. With the convergence of information from cutting-edge omics technologies, like genomics, proteomics, and metabolomics, together with bioinformatics, we are now able to shed light on the mechanisms of tumor cell development, evasion, and therapeutic targeting. Based on the latest research in these areas, we will cover the functional aspects of oncogenes, tumor suppressors, apoptotic genes, miRNAs, and other relevant players in cancer. You will explore the principles of therapeutic targeting in cancer, including the latest treatments, such as chemotherapy, gene therapy, humoral and cellular immunotherapy, and tumor vaccination. Through this Unit, you will gain insight into experimental methods for cancer diagnosis and discover how functional systems biology approaches are being used to identify new therapeutic targets. You will learn about the intrinsic mechanisms of tumor cells and the microenvironment that contribute to cancer heterogeneity and resistance. By the end of the Unit, you will be equipped with the knowledge and skills to better understand cancer biology, and be part of the next generation of precision-medicine therapeutics in cancer.

COORDINATOR

Cecília Maria Pereira Rodrigues

CO-COORDINATOR

Rui Eduardo Mota Castro

André Fernando Anastácio dos Santos,
Joana São José Dias Amaral, Marta Bento Afonso

PATHOPHYSIOLOGY OF NEUROINFLAMMATION

Neuroscience research advances consider the communication between the immune peripheral system (PNS) and the central nervous system (CNS). Neuroimmune interactions and inflammatory responses are central players in brain function and dysfunction. Their deregulation in brain disorders led to the development of tools to study the underlying pathological processes to find out targets and develop therapeutic strategies. To evaluate and identify the degree and type of neuroinflammation in a specific patient (signature) we use several tools to identify the cellular and molecular mechanisms involved, using biological fluids or patient-derived cells. Isolation and characterization of extracellular vesicles in liquid biopsies may help in disease diagnosis, where their content in microRNAs constitute a promising biomarker. Here, we will focus on the causes, signs, symptoms, and diagnosis of inflammation in the CNS, but also on how leukocytes are recruited and infiltrate the brain, or the communication of peripheral neuronal and glial cells with the CNS. Activation and heterogeneity of microglia and astrocytes in neuroimmune disorders, and changes in myelination/demyelination by dysfunctional oligodendrocytes will be envisaged in a PNS-CNS dialogue perspective.

CO-COORDINATOR

Adelaide Maria Afonso Fernandes Borralho

CO-COORDINATOR

Ana Rita Mendonça Vaz Botelho

Andreia Pereira Barateiro Macedo

PHARMACOGENETICS

This course provides students with an overview of the current knowledge in pharmacogenetics. Key areas covered by this course are: 1) Basic principles of human genetics; 2) Human genome and web accessible databases; 3) Methods to identify mutations and to study their functionality; 4) Basis of molecular epidemiology; 5) Genetic polymorphism of drug metabolizing enzymes and drug transporters (characterization and clinical importance); 6) Genetic polymorphism of genes responsible for the drug mechanism of action (characterization and clinical importance); 7) Importance of Pharmacogenetics for therapy of different types of diseases; 8) Association between certain HLA alleles and adverse drug reactions; 9) Useful pharmacogenetic biomarkers for prediction of adverse reactions/efficacy; 10) Personalized medicine in the future.

COORDINATOR

Elsa Margarida Teixeira Rodrigues

Filipa Duarte Ramos, Hélder Mota-Filipe,
Maria João Carlos da Silva Gama

PROTEOSTASIS & THERAPEUTIC DEVELOPMENT

This Unit includes theoretical and practical topics covering cellular events occurring in disturbed protein homeostasis as well as methods for the discovery of compounds aiming to restore the protein balance. Topics include: biologically assisted protein folding; the proteostasis network; conformational diseases and the proteostasis boundary; pharmacological modulation of proteostasis (pharmacologic chaperones, proteostasis regulators and synergistic effects); *in cellulo* and *in vitro* approaches to identify proteostasis checkpoints and modulators of protein folding; identified lead compounds as orphan drugs (Committee for Orphan Medicinal Products and Regulation on Orphan Medicinal Products). Hands-on classes will cover: expression and purification of an eukaryotic enzyme (wild-type and misfolded mutant); protein structural and functional characterization; identification of potential chemical/pharmacological chaperones. The students will also be trained for the use of bioinformatics tools for *in silico* analysis of proteins.

COORDINATOR

Ana Paula Peralta Leandro

Maria de Fátima Vieira Ventura

RESEARCH & DEVELOPMENT OF BIOPHARMACEUTICALS

Traditional biopharmaceuticals obtained by molecular engineering; strategies of biopharmaceutical discovery using molecular methods like proteomics, genomics and metabolomics; strategies of developing biopharmaceuticals using biomolecular technologies of bacterial and mammalian manipulation; methods of discovering and developing therapeutic proteins by direct evolution; direct mutagenesis aiming to improve interaction and stability of therapeutic proteins; development strategies of therapeutic antibodies; patent procedures and international protection; strategies of biopharmaceutical production using microbiological processes and mammalian cell culture; quality control of biopharmaceuticals. Case studies will be covered in several aspects of biopharmaceutical R&D: interferons, interleukins and tumour necrosis factor; growth factors; hormones with therapeutic interest; monoclonal and recombinant antibodies; vaccines; gene therapy and siRNA.

COORDINATOR

João Manuel Braz Gonçalves

SCIENTIFIC WRITING & COMMUNICATION

This Unit consists of a period of direct contact of the student with a scientific area of interest, within the scope of the programme contents of the Master Course in Biopharmaceutical Sciences. This period is followed by the preparation of a review article, under the supervision of the tutor. Included in the programme is the study of: 1) principles and methods of selection of review topics, according to their current relevance and general interest, based on critical and creative thinking; 2) planning and implementation of the literature review; tools and methodologies of bibliographic search; information sources; 3) critical analysis of related literature; 4) dissemination and presentation of results and conclusions from the literature review; content organization; standards for writing and editing a review article; ethics in literature review; dissemination sites, rules and norms associated with dissemination. It includes theoretical and practical knowledge about how to start a literature review; how to analyse and better select themes and sources of information; how to frame, interpret and critically evaluate available information; and how to present and disseminate results and conclusions of the review.

COORDINATOR

Cecília Maria Pereira Rodrigues

All teaching staff members

MASTER DEGREE IN BIOPHARMACEUTICAL SCIENCES

2024/25 . 15th EDITION

Accredited by Agência de Avaliação e Acreditação do Ensino Superior
(A3ES)



LISBOA

UNIVERSIDADE
DE LISBOA



FACULDADE DE
FARMÁCIA
Universidade de Lisboa

INFORMATION AND SECRETARIAT

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