



UB and UFC, “the place to be” for international students

High-quality supports:

— The University of Franche-Comté (UFC) and the University of Bourgogne (UB) are strongly involved in an I-SITE project to promote international research and education. It was recently approved by the French Ministry of National Education, Higher Education and Research and the General Commission for Investment.

— The International Relations Offices of UFC and UB welcome and assist international students to facilitate their adaptation to their new environment.

— The world-renown Center for Applied Linguistics (CLA) of the University of Franche-Comté provides its students with high quality training in French as a Foreign Language as well as in 9 other languages.

— Cultural spaces are available. A wide range of cultural activities are offered throughout the academic year including events such as Welcome Events for International Students or « La nuit des chercheurs » (a scientific event dedicated to research and fellow researchers), among many others.

— Students and staff are offered various sports and recreational activities through the university’s sports’ programs and are therefore able to enjoy and explore the regions’ beautiful outdoor environment and to participate in sporting events and championships.

The Quality of Life in Bourgogne - Franche-Comté

Experience a high-quality French way of life, in environmental-friendly cities, green campuses, nature-oriented activities, significant historical (Louis Pasteur; Victor Hugo) and cultural (culinary delights, museums) heritage, all at only a 2h-hour train ride from Paris, Lyon, Strasbourg, Germany or Switzerland.

CONTACTS

To have additional information about the Master’s program, please contact:

Yves Artur

Responsible for the Master’s program
yves.artur@u-bourgogne.fr

Arnaud Béduneau

Responsible for teachings related to nanoengineering
arnaud.beduneau@univ-fcomte.fr
Phone: +33 3 81 665 291

Anthony Romieu

Responsible for teachings related to molecular imaging
anthony.romieu@u-bourgogne.fr
Phone: +33 3 80 393 624



INTERNATIONAL
MASTER

UNIVERSITY OF FRANCHE-COMTÉ
UNIVERSITY OF BOURGOGNE

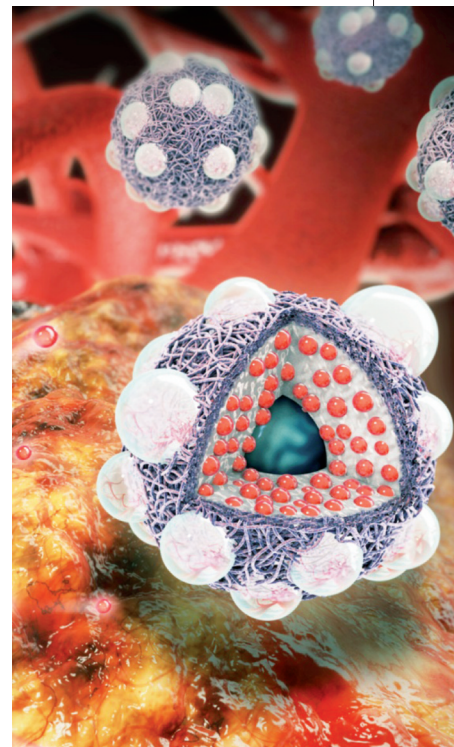
FRANCE

Biologie et produits de santé (BIOPS)

2nd year of Master, M2

The LipTherapI international Master

MSc LipTherapI



©Theranostics, 2015 Oct 18;5(12):1402-18.Min H.-S. et al

©PHOTOS: UFC, LUDDYIC GODARD - DOMINIQUE A. VUITION - VILLE DE BESANÇON - BOUTEILLER COMMUNICATION BESANÇON / IMPRESSION SIMON GRAPHIC ORMANS - MARS 2016



The LipTherapI international Master

UNIVERSITY OF FRANCHE-COMTÉ
UNIVERSITY OF BOURGOGNE
FRANCE



©Theranostics, 2015 Oct 18;5(12):1402-18.Min H.-S. et al



Context

For several decades, medical research was tremendously impacted by the emergence of targeted strategies to deliver drugs and imaging probes to specific tissues or cells. The recent advances in both nanomedicines and new molecular imaging tools allowed together the enhancement of the efficiency and the safety of therapeutic treatments owing to a selective drug transport and an early diagnosis of the disease. Nowadays, numerous research programs focus on an innovative approach so-called theranostic approach to develop “all-in-one” healthcare products to treat and follow up the therapeutic response.

Objectives

The LipTherapI international Master is a program in the field of innovative strategies for diagnostic and therapeutic applications. Students enrolled in the one-year full-time program will acquire a dual skill in molecular imaging and in pharmaceutical nanoengineering. Fundamental concepts are integrated in a common core course. Advanced aspects of imaging and pharmaceutical technologies are addressed as optional units and given by health professionals, industrial and academic researchers. Some of lecturers are involved in research excellence programs including the Labex LipSTIC (Lipoprotein and health, prevention and treatment of inflammatory diseases and cancer) and the Equipex IMAPPI (Integrated magnetic resonance and positron emission tomography in preclinical imaging). The content of the diagnosis-related topics cover the fundamentals of modern functional and molecular imaging techniques and selected medical and industrial applications, along with the chemistry behind imaging agents (molecular probes), drugs and clinically relevant biomarkers. The nanoengineering part mainly focuses on the biomimetic and biological nanocarriers such as the lipoproteins for the treatment of inflammatory diseases and cancer. Related to the importance of the social impacts of these innovative strategies, a course is dedicated to communication, science and technology watch.

Skills

- Molecular imaging techniques
- Labelling chemistry and bioconjugate techniques
- Pre-formulation
- Preparation and physicochemical characterization of nanoparticles
- Bioengineering of lipoproteins
- Nanomedicines, lipid-based formulations
- Experimental pharmacology
- Regulation of health products for diagnosis and therapy
- Project management
- Experience in a research lab

Entry requirements

- Validation of a first full year Master of Science in biology, physics, chemistry or life sciences
- Doctor of Pharmacy (Pharm. D.) or Doctor of Medicine (MD)
- Or a significant professional experience in connection with the program of the Master and after the approbation of the pedagogical committee of the Master
- The program requires at least a level of English equivalent to B2 on the Common European Framework of Reference for Languages (CEFR).

Application process

- For students outside of the European Community and residing in one of the 35 countries with a Campus France local office, online CEF procedure is required **before March 31st**.
<http://www.campusfrance.org/en/page/a-country-using-cef-procedure>
- For students who are not French and residing in a country of the European Community or not enrolled in the Campus France Program, application form must be filled online **before June 1st** at the following address:
https://www.service4mobility.com/europe/Bewerbung_Servlet?identifier=DJON01&kz_bew_art=IN&kz_bew_pers=S&aust_prog=ETUD_INDIV_FR&sprache=fr
- For French students, application form must be filled online **before June 1st** at the following address:
<https://ecandidat.u-bourgogne.fr/ecandidat/stylesheets/welcome.faces>
- Application will be assessed by the pedagogical committee of the Master.

Career opportunities

- R&D engineer in pharmaceutical companies
- Technical consulting in the development of nanomedicines and molecular imaging
- Biotechnology engineer
- Clinical imaging engineer
- Radiochemist in molecular imaging centers
- Hospital career

Post-graduate studies

- Doctoral degree in pharmaceuticals (pharmaceutical technology) or in chemistry

Course content (30 ECTS)

Lectures are scheduled from September to December and take place at the Universities of Bourgogne and Franche-Comté in Besançon and Dijon.

Common courses:

- UE1: Refresher courses, technology watch, communication and local culture (6 ECTS)
- UE2: General pharmacology, regulations and security (6 ECTS)
Methodological requirement and new trends in drug discovery
- UE3: Basic concepts of pharmaco-imaging and pharmaceutical technology (6 ECTS)

Optional advanced courses in molecular imaging:

- UE4: Advanced chemical pharmaco-imaging (6 ECTS)
- UE5: Applications in pharmaco-imaging (3 ECTS)
- UE8: Tutored project (3 ECTS)

Optional advanced courses in nanoengineering:

- UE6: Nanovectors in drug and gene delivery (6 ECTS)
- UE7: Nanovectors and lipoproteins (3 ECTS)
- UE8: Tutored project (3 ECTS)

Internship (30 ECTS)

6-month internship in an academic or industrial research team. Projects topics focusing on the imaging, the therapeutic and theranostic nanomedicines should be beforehand approved by the pedagogical committee of the Master. Owing to Research Excellence Programs (LipSTIC and IMAPPI) and a strong network of European and International laboratories associated to the program of LipTherapI Master, a list of internships will be provided to students. They can also seek an internship by themselves.