

BIOTECHNOLOGICAL, BIOCOMPUTATIONAL, PHARMACEUTICAL AND PHARMACOLOGICAL SCIENCES

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Starting date of the PhD Programme	01/11/2020
Duration	3 calendar years
Language of the PhD Programme	Italian
Mandatory stay abroad	Yes (6 months)

Research topics

The doctoral course will develop research themes needed to encourage and emphasize the discovery of new therapeutic targets as well as of new drugs and to study their profile of efficacy and safety. The discovery of novel drug targets, in fact, is followed by the creation of new drugs from the study of molecular entities and the examination of receptors, enzymes or intracellular signaling pathways that may contribute to a specific disease and / or its progression. It is proposed to PhD students an integrated cross training, useful for their future employment access in pharmaceutical and biotechnology companies. The themes of the new PhD programme are mainly focused on:

- studies of living systems or at cellular and molecular level, or on native or recombinant DNA products, by learning about complex biological and biochemical processes;
- the synthesis, characterization, analysis, delivery, efficacy and safety of new drugs, including those obtained through biotechnology;
- biocomputational approaches useful to discovery new therapeutic targets and to characterize drug-ligand interactions;
- the development of pharmacological and toxicological issues focused on the study of the mechanism of action and toxicological aspects of bioactive molecules;
- studies of genetic and epigenetic profiles in response to drug treatments, evaluation of drug effectiveness and safety, and identification of risk factors associated with chronic degenerative diseases;
- the development of suitable animal models of diseases for the evaluation of new compounds already studied in in vitro models.

PhD students will, therefore, investigate different areas of biotechnology; they will follow the discovery, synthesis, characterization and analysis of new drug targets and new drugs, including those obtained through the techniques of recombinant DNA and will use the most advanced methods, including a biocomputational approach.

PhD positions and scholarships

Position n.	Financial support	Description	Positions linked to research subjects
1	PhD Scholarship	Totally funded by the University of Bologna general budget	
2	PhD Scholarship	Totally funded by the University of Bologna general budget	
3	PhD Scholarship	Totally funded by the University of Bologna general budget	
4	PhD Scholarship	Totally funded by the University of Bologna general budget	
5	PhD Scholarship	Totally funded by the University of Bologna general budget	
6	PhD Scholarship	Totally funded by the University of Bologna general budget and co-funded by the Department of Pharmacy and Biotechnology	
7	PhD Scholarship	Funded by the Department of Pharmacy and Biotechnology with funds made available by the Università Italo - Francese (Chapter III - Vinci Call 2019) aimed at the implementation of a cotutelle agreement with Marseille Université (France), in compliance with a study and research plan approved by UIF. The PhD candidate beneficiary of such PhD scholarship will be requested to spend a period at the University partner of the cotutelle agreement, in compliance with the approved plan.	Initial stages of bone remineralization: multimodal investigation using X-ray microscopy and Magnetic Resonance techniques
8	Research Grant	Provided by the Department of Pharmacy and Biotechnology. The research grant will have a duration of 36 months and a gross percipient amount of € 61.006.	Drug discovery

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Positions linked to specific research subjects: during the oral examination, applicants may express to the Admission board their interest in one or more positions linked to specific research subjects. Considering the expressions of interest above, the Admission Board shall express its view on the suitability of the interested applicants, taking into account their specific skills, experience and aptitude.

Admission requirements

Please, see art. 2 of the Call for applications

Mandatory documents to be attached to the application

Please, see art. 3 of the Call for applications

Further qualifications that may be attached to the application, if in possession of the applicant (only qualifications attested by documents drawn up in Italian, English, French, German and Spanish shall be considered as valid and assessed by the Admission Board)

- The second cycle master's degree thesis. Undergraduate applicants may submit the draft of the thesis approved by their supervisor (please, note that abstracts must be at least 5.000 characters, plus spaces and formulas possibly used. The above figure does not include: the title of thesis, the outline, and images such as graphs, diagrams, tables, references etc. - where present).
- No more than 2 reference letters signed by Italian and international academics and professionals in the research field, which do not form part of the Admission Board, attesting the suitability of the applicant and his/her interest for the scientific research.
Please, note that the above letters cannot be uploaded by applicants. When filling the online application form on <http://studenti.unibo.it>, applicants will be only allowed to provide the email accounts of the requested academic/professional. The latter shall receive an email from the University of Bologna providing for the instructions for uploading. Only letters in pdf format submitted before the expiry date and time of the Call shall be accepted.
- Motivation letter. This must include the reasons prompting the applicant to attend the PhD Programme and those relevant experiences and research interests, that make the applicant suitable for the specific PhD Programme (3000 characters maximum, including spaces).
- List of the publications (monographs, articles published on scientific journals, book's chapters).
- List of the minor publications (conference papers, etc.).
- List of the abstracts and posters presented during national and international conferences, etc.).
- Research activity of any kind - whether basic, applied, translational, etc. - carried out in any capacity, including when covered by research grants, and as a staff member of research projects.
- Documents attesting the knowledge of foreign languages.
- Study periods completed by students outside their countries of origin (e.g. Erasmus programme or other similar mobility programmes).
- Other qualifications attesting the suitability of the applicants (scholarships, prizes, etc).

Admission exams (art. 4 of the call for applications)

Examination type	Schedule (please, note that applicants shall not receive any communication concerning the exams schedule)	Examination results publication (please, note that applicants shall not receive any communication concerning the publication of results)
Evaluation of qualifications	Non-presential.	The results of the evaluation of qualifications shall be available online starting from the 01/06/2020 at the page http://studenti.unibo.it (please, select: (please, select "summary of the requests in progress" - "see detail" and open the pdf file "risultati valutazione titoli")
Oral examination	Date 15/06/2020 In case that the oral examination cannot be completed in one day due to the large number of applicants, the oral exam schedule shall be made available at the webpage http://studenti.unibo.it together with the results of the evaluation of qualifications	The results of the oral examination shall be available on the webpage http://studenti.unibo.it starting from 29/06/2020 (please, select "summary of the requests in progress" - "see detail" and open the pdf file "risultati prova orale")

	Time	10:00 a.m. (local time)
Applicants shall take the exam remotely. For further details please refer to the relevant provision laid down in art. 4 of the Call for applications.		
Evaluation criteria		
Points will be allocated to applications out of a total of 100 on the basis of the following weighting:		
1. Qualifications		
<ul style="list-style-type: none"> - Minimum for admission to the oral exam: 30 points - Maximum: 50 points 		
Only qualifications relating to the last 5 calendar years prior to the calendar year of publication of the Call for applications shall be taken into consideration, with the exception of the University Degree (Diploma di laurea). Please, note that qualifications must be consistent with the PhD Programme.		
Points relating to qualifications shall be allocated on the basis of the following criteria:		
<ul style="list-style-type: none"> - Graduation final mark. Undergraduates shall be evaluated on the basis of the Weighted Average Mark (WAM): max 20 points - Publications: max 5 points - Second level Master's degree thesis (undergraduates can present a long and complete summary): max 20 points - Previous experiences in the research field carried out after graduation and other qualifications: max 5 points 		
2. Oral examination		
<ul style="list-style-type: none"> - Minimum for inclusion in the final ranking list :30 points - Maximum: 50 points 		
Oral examination is intended to assess the suitability of the applicant in respect of the pursuing of scientific research as well as the general knowledge of issues connected to the PhD Programme.		
During the oral examination, knowledge of English language shall be assessed.		
The oral examination is carried out in Italian or in English (for non-Italian speakers, if requested).		
Points relating to the oral examination shall be allocated on the basis of the following criteria:		
<ul style="list-style-type: none"> - Knowledge of the English language: max 5 points - General knowledge of issues connected to the PhD Programme: max 45 points 		
Possible evaluation sub-criteria will be available on the Unibo website , selecting the relevant PhD Programme → “PhD programme information” at the bottom of the page in the section “Notices”.		
Final ranking list and enrolment (arts.6 and 7 of the Call for applications)		
After the publication of the results of the oral exam, the final ranking list will be available on the Unibo website , selecting the relevant PhD Programme → “PhD programme information” at the bottom of the page in the section “Notices”.		
Following the publication of the final ranking list, successful applicants must enroll on http://studenti.unibo.it by the deadline indicated on the Unibo website , selecting the relevant PhD Programme → “PhD programme information”.		