



### FERMENTATION ANTIBIOTICS

<b>Enrollment year</b>	2019/2020
<b>Academic year</b>	2020/2021
<b>Regulations</b>	DM270
<b>Academic discipline</b>	CHIM/11 (CHEMISTRY AND BIOTECHNOLOGY OF FERMENTATIONS)
<b>Department</b>	DEPARTMENT OF MOLECULAR MEDICINE
<b>Course</b>	MEDICAL AND PHARMACEUTICAL TECHNOLOGIES
<b>Curriculum</b>	Farmaceutico: Biotecnologie farmaceutiche per la ricerca e sviluppo
<b>Year of study</b>	2°
<b>Period</b>	(05/10/2020 - 22/01/2021)
<b>ECTS</b>	3
<b>Lesson hours</b>	24 lesson hours
<b>Language</b>	Italian
<b>Activity type</b>	WRITTEN TEST
<b>Teacher</b>	UBIALI DANIELA - 3 ECTS
<b>Prerequisites</b>	To attend this course, a good knowledge of organic chemistry as well as microbiology (in particular the metabolism of microorganisms) is required
<b>Learning outcomes</b>	This course aims at providing students with the knowledge about discovery, classification, biosynthesis, mechanism of action, and structure-activity relationships (SAR study) of the more relevant classes of antibiotics produced by fermentation
<b>Course contents</b>	<ul style="list-style-type: none"><li>-Introduction to fermentation antibiotics</li><li>-Genetics of producer microorganisms and methods of strain improvement (basics)</li><li>-Beta-lactam antibiotics</li><li>-Glycopeptide antibiotics</li><li>-Macrolides and tetracyclines</li><li>-Aminoglycosides and rifamycin</li></ul>

	-The downstream process in industrial fermentations
<b>Teaching methods</b>	<p>Lectures supported by slides and videos. Seminars will be also given by experts in industrial fermentation both from University and industry</p> <p>In compliance with the regulations concerning physical distancing for the control of COVID-19 pandemic, lectures will be given in the classroom to small groups on a weekly rotation basis (see <a href="https://web.unipv.it/coronavirus/">https://web.unipv.it/coronavirus/</a> for more details). All lectures will be also available online (Kiro).</p> <p>Depending on the number of students and the evolution of the sanitary situation (COVID-19), a visit to fermentation industrial plants might be scheduled</p>
<b>Reccomended or required readings</b>	<p>Slides and scientific papers provided by the professor.</p> <p>Reference books:</p> <p>B.R. Glock and J.J. Pasternak, <i>Biotechnologia molecolare</i>, Zanichelli</p> <p>G.Lancini and R. Lorenzetti, <i>Biotechnology of antibiotics and other bioactive microbial metabolites</i>, Plenum Press</p> <p>F. Marinelli and O. Genilloud, <i>Antimicrobials: new and old molecules in the fight against multi-resistant bacteria</i>, Springer</p> <p>A. Moreira, <i>Volume 3 Industrial biotechnology and commodity products</i>, <i>Comprehensive Biotechnology</i>, second edition, Elsevier</p>
<b>Assessment methods</b>	<p>Students will be examined by an oral exam aimed at verifying the achievement of the educational goals laid out (see “Obiettivi formativi”).</p> <p>Correctness of contents, completeness of answers, property of language, and knowledge of technical terminology will be assessed.</p> <p>The exam will be passed if students achieve a grade in the 18-30 cum laude range.</p>
<b>Further information</b>	<p>Slides used during lectures can be downloaded from the website Kiro.</p> <p>Videos and scientific papers (both in English) are also available in Kiro.</p> <p>Communications/notices to the students will be uploaded in Kiro, too.</p>
<b>Sustainable development goals - Agenda 2030</b>	<a href="#">\$ bl legenda sviluppo sostenibile</a>