

# Master in Life Sciences

A cooperation between  
BFH, FHNW, HES-SO, ZHAW

<b>Module title</b>	<b>Compound Profiling in Pharmaceutical Drug Discovery</b>
<b>Code</b>	BP1
<b>Degree Programme</b>	Master of Science in Life Sciences
<b>Group</b>	Bio/Pharma
<b>Workload</b>	3 ECTS (90 student working hours: 42 lessons contact = 32 h; 58 h self-study)
<b>Module Coordinator</b>	<p><b>Name:</b> Dr. Laura Suter-Dick  <b>Phone:</b> +41 (0)61 228 56 59  <b>Email:</b> <a href="mailto:laura.suterdick@fhnw.ch">laura.suterdick@fhnw.ch</a>  <b>Address:</b> Hochschule für Life Sciences FHNW, Institut für Chemie und Bioanalytik, Gründenstrasse 40, 4132 Muttenz</p>
<b>Lecturers</b>	<ul style="list-style-type: none"> <li>• Dr. Laura Suter-Dick, FHNW</li> <li>• Dr. Eric Kübler, FHNW</li> <li>• Dr. Johannes Mosbacher, FHNW</li> <li>• Guest lecturers (Industry)</li> </ul>
<b>Entry requirements</b>	<ul style="list-style-type: none"> <li>• Bachelor Degree in Life Sciences</li> <li>• Course on bioanalytics, pharmacology, drug discovery, biochemistry, molecular biology and pharmacokinetics</li> <li>• Self-test on Moodle</li> </ul>
<b>Learning outcomes and competences</b>	<p>The focus of the course lies on the characterization of small molecules in drug discovery, from the identification of a “drugable” target to the selection of a clinical candidate.</p> <p>After completing the module, students will be able to:</p> <ul style="list-style-type: none"> <li>• explain the process of identifying and characterizing a new drug target</li> <li>• apprehend the value of screening systems to identify bioactive compounds on the level of hits</li> <li>• recognize the use of in vitro and in vivo models for drug efficacy and early ADME</li> <li>• understand toxicological studies in view of drug safety</li> <li>• plan experiments clarifying pharmacological and toxicological findings</li> <li>• understand the concept of translational research (Bench to Bedside)</li> <li>• describe and explain profiling activities of a selected compound from literature</li> </ul>
<b>Module contents</b>	<p>From target identification to clinical candidate selection: Concepts and Processes</p> <ul style="list-style-type: none"> <li>• The process of identification of a target</li> <li>• Overview on high-throughput-systems</li> <li>• The concept of iterative compound optimization</li> <li>• Concept, relevance and implementation of ADME in drug screening</li> <li>• Regulatory requirements in toxicology and safety assessment</li> <li>• Extrapolation from animal and in vitro studies to man</li> <li>• Determination of a safe dose to start clinical trials</li> <li>• Decision making: if, when and how should clinical Phase 1 studies be performed</li> </ul>
<b>Teaching / learning methods</b>	<ul style="list-style-type: none"> <li>• Lectures, self-study, invited speakers from the pharmaceutical industry</li> <li>• Team based learning using case studies</li> <li>• Short group presentations</li> </ul>
<b>Assessment of learning outcome</b>	<ol style="list-style-type: none"> <li>1. Group work (25%)</li> <li>2. Closed book exam (75%)</li> </ol>

# Master in Life Sciences

A cooperation between  
BFH, FHNW, HES-SO, ZHAW

<b>Format</b>	7-weeks
<b>Timing of the module</b>	Autumn semester, CW 45-51
<b>Venue</b>	Blended learning format. Presence sequences take place in Olten
<b>Bibliography</b>	Current publications Drug Discovery and Development. Edited by H.P. Rang. 2006. Churchill Livingstone Real World Drug Discovery. Robert M. Ryzewski. ELSEVIER, Amsterdam 2008. Toxicology: The Basic Science of Poisons. Klaassen, C.D. (Ed), McGraw-Hill, New York 2008 FDA Guideline M3(R2) "Nonclinical Safety Studies for the Conduct of Human Clinical Trials and Marketing Authorization for Pharmaceuticals" <a href="http://www.fda.gov">www.fda.gov</a> Drug Discovery and Evaluation: Pharmacological Assays, H.G. Vogel, 2008, Springer Verlag FDA Guidelines for Industry: Guidance for metabolism and drug interactions studies – study design, data analysis, and recommendations for dosing and labeling, 2012. <a href="http://www.fda.gov">www.fda.gov</a>
<b>Language</b>	English
<b>Links to other modules</b>	-
<b>Comments</b>	-
<b>Last Update</b>	06.03.2026