

Master in Life Sciences

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

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

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Assessment of learning outcome	1. closed book exam (100%)
Format	7-weeks
Timing of the module	Autumn semester, CW 38-44
Venue	Olten
Bibliography	<p>Drug Discovery and Development. Edited by H.P. Rang. 2006. Churchill Livingstone</p> <p>Real World Drug Discovery. Robert M. Rydzewski. ELSEVIER, Amsterdam 2008.</p> <p>Toxicology: The Basic Science of Poisons. Klaassen, C.D. (Ed), McGraw-Hill, New York 2008</p> <p>Mechanistic Toxicology: The molecular basis of how chemicals disrupt biological targets. Urs. A. Boelsterli. Taylor & Francis, London 2003.</p> <p>Predictive Toxicology, from vision to reality. Edited by F. Pfannkuch and L. Suter-Dick, 2015. Wiley-VCH, Weinheim, Germany</p> <p>Drug Discovery and Evaluation: Pharmacological Assays, H.G. Vogel, 2008, Springer Verlag</p> <p>FDA Guidelines for Industry: Guidance for metabolism and drug interactions studies – study design, data analysis, and recommendations for dosing and labeling, 2012. www.fda.gov</p>
Language	English
Links to other modules	
Comments	
Last Update	10.04.2019