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	Name: Dr. Laura Suter-Dick
Coordinator	Phone: +41 (0)61 228 56 59
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	Address: Hochschule für Life Sciences FHNW, Institut für Chemie und Bioanalytik,
	Gründenstrasse 40, 4132 Muttenz
Lecturers	Dr. Laura Suter-Dick, FHNW
	Dr. Eric Kübler, FHNW
	Dr. Johannes Mosbacker, FHNW
	Guest lecturers (Industry)
Entry requirements	Bachelor Degree in Life Sciences
	Course on bioanalytics, pharmacology, drug discovery, biochemistry, molecular
	biology and pharmacokinetics
	Self-test on Moodle
Learning outcomes	The focus of the course lies on the characterization of small molecules in drug
and competences	discovery, from the identification of a "drugable" target to the selection of a clinical
	candidate.
	After completing the module, students will be able to:
	 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	From target identification to clinical candidate selection: Concepts and Processes
	 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
	 Extrapolation from animal and in vitro studies to man
	 Determination of a safe dose to start clinical trials
	Decision making: if, when and how should clinical Phase 1 studies be performed
Teaching / learning	 Lectures, self-study, invited speakers from the pharmaceutical industry
methods	Team based learning using case studies
	 Short group presentations

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Assessment of	1. Group work (25%)
learning outcome	2. Closed book exam (75%)
Format	7-weeks
Timing of the	Autumn semester, CW 38-44
module	
Venue	Blended learning format. Presence sequences take place in Olten
Bibliography	Current publications Drug Discovery and Development. Edited by H.P. Rang. 2006. Churchill Livingstone Real World Drug Discovery. Robert M. Rydzewski. 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" www.fda.gov 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. www.fda.gov
Language	English
Links to other	
modules	
Comments	
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