

Title of module	XIII Master Project
Module coordinator	Prof. Dr. Beate Brand-Saberi

Credit points	30	Semester(s) in which the module is taught	4
Contact hours	40	Workload	900 hours

Lecturer(s)	All PIs from the associated labs	
Type of teaching	Practical work and instructions accompanying lab bench work Presenting progress reports in the seminar (1 hour per week) Discussion of drafts for the master thesis	
Relation to curriculum	Compulsory; elective	
Prerequisites	The successful completion of all previous modules (except of the module XII Master Project itself) is required as prerequisite.	
Aims	In the module "Master Project", the students will be enabled to plan, perform lab experiments choosing from a range of particular methods to solve a particular question and to interpret their results in context with the relevant literature. They will be enabled to act under regular supervision independently. They will master the task to take over scientific responsibility.	
Learning outcome	Knowledge: Students have gained knowledge on research topics of the host lab and in depth- knowledge of project-related literature. Skills: Students are able to generate, document and interpret original research data	
	Competencies: Students are capable of critically evaluating their own research data by discussions with supervisors and lab-fellows in the context of current and historical literature; they will be able to keep up with relevant publications in the field. They are capable of adapting their time schedule. Students are self-dependent, self-organized and interact in a laboratory environment in a responsible way;	
Contents of module	The topic of research project: http://www.ruhr-uni-bochum.de/istem/Mastertopics.html	
Study and examination requirements; Forms of examination	Regular progress reports and discussions with the supervisor in the context of the master project and in the seminar with lecturers and fellow students are required; The assessment will be done on the basis of a written master thesis in English language.	
Literature	Mavrommatis L., Zaben A.,Zähres (2023) CRISPR/Cas9 Genome Editing in LGMD2A/R1 Patient-Derived Induced Pluripotent Stem and Skeletal Muscle Progenitor Cells. Stem Cells International Volume 2023, Article ID 9246825 Yahya I, Abduelmula A, Hockman D, Brand-Saberi B, Morosan-Puopolo G. Dev Biol. 2024 506:52-63. doi: 10.1016/j.ydbio.2023.12.001. Epub 2023 Dec 8. PMID: 38070699 Mavrommatis L, Jeong HW, Kindler U, Gomez-Giro G, Kienitz MC, Stehling M, Psathaki OE, Zeuschner D, Bixel MG, Han D, Morosan-Puopolo G, Gerovska D, Yang JH, Kim JB, Arauzo-Bravo MJ, Schwamborn JC, Hahn SA, Adams RH, Schöler HR, Vorgerd M, Brand-Saberi B, Zaehres H. Elife. 2023 Nov 14;12:RP87081. doi: 10.7554/eLife.87081. PMID: 37963071 Human skeletal muscle organoids model fetal myogenesis and sustain uncommitted PAX7 myogenic progenitors	

Faculty of Medicine International Master Program Stem Cell Biology

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Kim, et. al., (2009) Direct reprogramming of human neural stem cells by OCT4
Nature 461: 649-653.
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"Vartabrate Myoganasis: Stem Calls and Procursors" Reate Brand-Saberi (ed.)
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source for scatfold-based tissue engineering. J Tissue Eng Regen Med. 2013 epub
Klump H, Teichweyde N, Hinrichs C, Horn PA. Development of patient-specific
hematopoietic stem and progenitor cell grafts from pluripotent stem cells, in vitro.
Current Molecular Medicine. 2013