

Title of Course: Advanced Practical in the Focal Point Programme "Molecular Medicine" "Molecular mechanisms of allergic disorders"					
Type: Mandatory practical with choices		185881	Workload 240 h	Intended for Semester 2	Duration 0.5 Semester
1	Module: Advanced Practical with seminar	Presence hours per course a) 112 h b) 14 h		Self-study 114 h	Credit Points 8 CP
2	Teaching Methods: a) Practical b) Seminar A five-week all-day practical lab course with a compulsory seminar presentation. Please note: A second Advanced Practical will have to be performed in the same semester to earn the full complement credits				
3	Group Size: Individual training				
4	Learning/Course Objectives: The students will learn how the immune system acts in allergic disease like asthma. Modern methods to study immune responses in vivo and in vitro will be introduced and depending on the project actively performed by the students. Students practice experimentation on a small, closely supervised project in a research lab. They also practice how to properly evaluate and document experimental data. Finally they practice how to write a concise, informative, sufficiently detailed and precise protocol. Finally, they show their data in the lab seminar of their supervisor, typically in an oral presentation, thereby practicing how to present experimental data to an audience.				
5	Contents: Depending on the project, the students will learn different immunological methods: - murine models of allergic asthma - transgenic mouse models - analysis of Tissue resident memory cells in the lung - infection of mice with Respiratory Syncytial Virus (RSV) - ELISA and Western Blot for detection of immunologic relevant molecules like cytokines and antibodies - multicolor flow cytometric analysis of leucocytes - Isolation of lymphocyte subpopulations by magnetic or fluorescence activated cell sorting - In vitro assays to analyze the influence of pathogen associated molecular patterns (PAMPs) on the immune response Seminar: participation in the lab seminar of the institute, presentation of the own results				
6	Degree Courses: Master of Science Biochemistry;				
7	Prerequisite(s): The four Modular Advanced Practicals of the first Master semester have to be passed				
8	Method(s) of Examination: Assessment of experimental skills during the practical (50%), a written project report (40%), and a seminar presentation of experimental results (10%).				
9	Requirements for Acquiring Credit Points: Achievement of at least the mark "sufficient" regarding the above modes of examination.				
10	Significance for Overall Grade: Weighted according to the 16 CPs for two practical courses the average grade of the two practicals provides 13.3% of the overall grade				

11	Frequency: Every summer semester and every winter semester
12	Supervisor(s): PD Dr. Marcus Peters and teaching assistants
13	Additional Information: