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| <i>Title of module</i> | Special Lecture in the Focal Point Programme "Molecular Medicine", VZ:185800, 185801 "Molecular Regulation and Pharmacology of the Cardiovascular System " | | |
| <i>Credit points</i> | 5 | <i>Available in semester(s)</i> | 2 |
| <i>Hours per week</i> | 2+1 | <i>Compact course</i> | <input type="checkbox"/> |
| <i>Lecturer(s)</i> | K. Jaquet, , MC Kienitz, D. Kösling, W. Linke, A. Mügge, L. Pott, A. Unger | | |
| <i>Teaching methods</i> | Lecture: 2 hours per week | | |
| <i>Evaluation of learning progress</i> | Active participation in lectures, presentation of a seminar talk | | |
| <i>Mode of examination</i> | 30-45 min end-of-term oral exam plus one 30-min seminar talk given by the student (a paper review) | | |
| <i>Learning objectives</i> | At the end of the lecture series the student shall have gained knowledge about the structure of organs, cells and molecules, functional principles, molecular regulatory pathways, and main principles of pharmacological treatment of cardiovascular disease. | | |
| <i>Soft skills</i> | PowerPoint presentation of a scientific paper, with feedback. | | |

Contents of module

Physiology and Pathophysiology of the cardiovascular system; Cardiac muscle; Smooth muscle; Molecular mechanisms of contraction and contractile regulation; Sympathetic and parasympathetic nervous system; Pharmacodynamics; Pharmacokinetics; Ion channels; RAA-system; NO drugs; Beta blockers; ACE inhibitors; Calcium channel blockers

Lecture topics (provisional):

Overview of the cardiovascular system, incl. diseases
Molecular basis of heart and smooth muscle contraction
Signaling mechanisms in cardiac cells
Regulatory mechanisms of muscle contraction
Autonomous nervous system: Signals
Cardiac physiology
Cardiovascular physiology
Physiology of the circulation
Cardiovascular pharmacology
Clinical cardiology