

KoMORB-02

Modern methods and approaches in cardiovascular bioanalytics: *Lecture*

Organiser: PD Dr. V. Jankowski (IMCAR)

Event type: Lecture with hands-on demonstrations and practice (50% / 50%) and seminar

Lecturer (Institute/Clinic):

Prof. Dr. J. Jankowski, PD Dr. V. Jankowski, Dr. Noels, PD Dr. med. Liehn (IMCAR)

Content description:

The module conveys an overview about essential methods in modern bioanalytics in life science with focus on cardiovascular diseases.

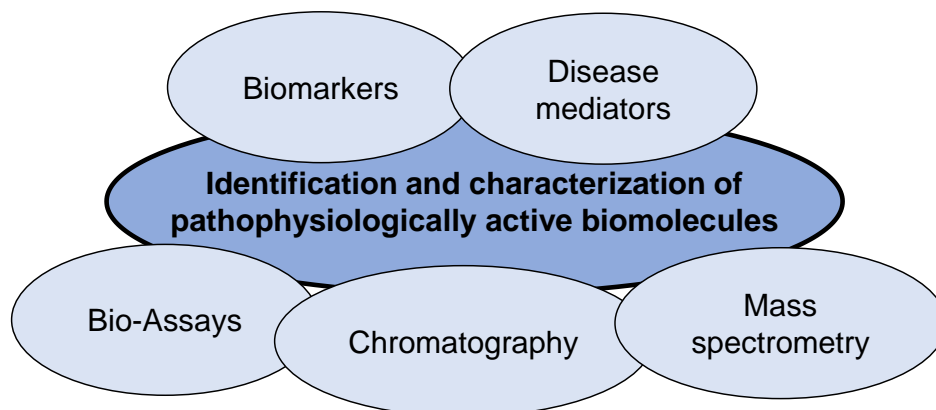
- Basic principles in *isolation of biomolecules* (Chromatography) are taught and bioassay systems in cardiovascular research are introduced, which can be used for characterization of the concerning biomolecules.
- Knowledge about modern mass spectrometric methods is provided. Especially proteomic and peptidomic techniques in cardiovascular research are discussed („*Proteomics*“, „*Peptidomics*“).
- Approaches in systems medicine are explained, performed with examples and discussed in their context of biological, biochemical and medical questions.

The lectures are complemented with practical demonstrations (~50%/50%). Thereby we intend to lay the foundation to find and successfully perform an experimental doctoral thesis.

Furthermore, in a complementary seminar session, an original paper and a review article will be presented by the students using a Powerpoint-presentation and will be discussed with the seminar participants.

At the end of this course, the participants will understand the basics of cardiovascular bioanalytics and will have gained an overview on strategies for the isolation, identification and characterization of biomolecules.

For further information: vjankowski@ukaachen.de



Learning aims: The student will be able to

- Explain strategies and basic principles of isolation, identification and characterization of biomolecules
- Explain the physico-chemical principles of bioanalytical methods (especially of chromatography and mass spectrometry)
- Recognize and explain the corresponding methods in a wider context
- Recognize and explain the importance of these methods to study cardiovascular questions
- Comprehend the content of current original literature and elaborate the key statements

Date and place: Each Thursday, 8h45-10h15
Online (Participation link via vjankowski@ukaachen.de)