

Lipids in health & disease

Organiser: Dr. Heidi Noels (IMCAR)

Event type: Lectures

Lecturers:

University of Aachen, Germany (Prof. J Jankowski, PD Dr V Jankowski, Dr Noels, Prof. M. Lehrke, Prof. T. Lammers)

University Maastricht, the Netherlands (Prof. F. Schaap, Prof. Martinez)

University Leuven, Belgium (Prof. J. Swinnen)

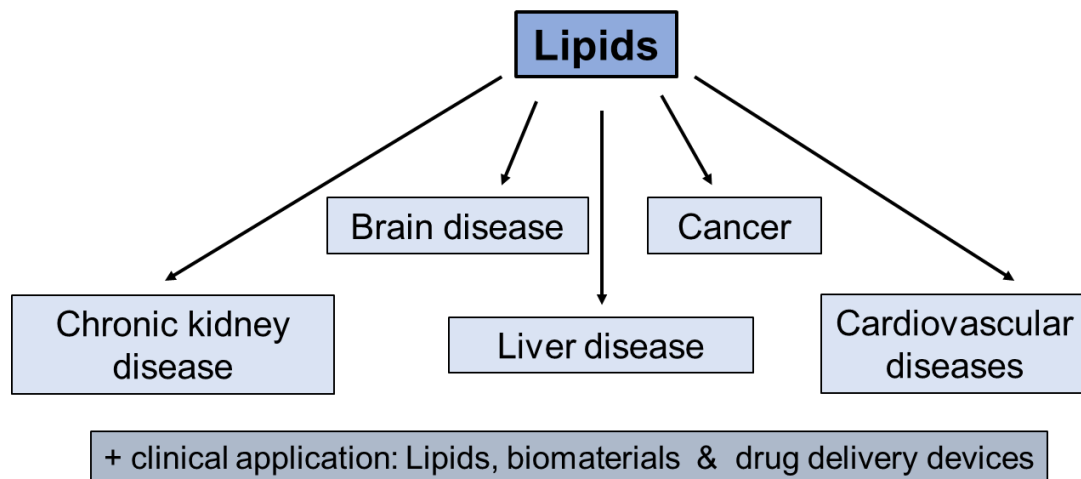
University Hasselt, Belgium (Prof. J. Hendriks)

Content description:

Lipids are of decisive importance for many diseases, such as cardiovascular diseases (e.g. infarctions), neuronal diseases (e.g. Alzheimer's disease) and cancer. These are the most important diseases in western societies and cause a high mortality. Lipids are also essential for the function of biomaterials and can be used in drug delivery devices. In this course we aim to describe the role of lipids in human health and disease, as well as their application in biomaterials and drug delivery systems.

1. Course Introduction
2. Biochemistry of lipids (IMCAR)
3. Lipids in health & disease – cardiovascular disease (IMCAR, Medi)
4. Lipids in health & disease – chronic kidney disease (IMCAR)
5. Lipids in health & disease – bile acids, lipids and liver disease (IMCAR/Frank Schaap, University Maastricht)
6. Lipids in health & disease – cancer (IMCAR/Johan Swinnen, University Leuven)
7. Lipids in health & disease – fatty acids & brain disease => (IMCAR/Prof. Jerome Hendriks, University Hasselt)
8. Lipids in health & disease – Structural (sphingo)lipids in neurological diseases (IMCAR/Prof. Martinez, University Maastricht)
9. Lipid fingerprinting in disease: basic principles of chromatography and mass spectrometry (IMCAR)
10. Lipid Imaging and Identification using Mass Spectrometry (IMCAR/Shane Ellis, University Maastricht)
11. Application: Lipid-based nano- and micromaterials for diagnosis and therapy (Twan Lammers, ExMI)
12. Application: Lipids & biomaterials (IMCAR/Ynze Mengerink, DSM)

Language: English!



Learning aims: The student will be able to

- Explain the biochemistry of lipids and the role of lipids in cellular processes
- Describe different lipid-mediated diseases at the molecular level
- Explain the use of lipids in diagnosis and therapy
- Explain methods of lipid analysis, with a focus on mass spectrometry
- Apply new knowledge and principles to understand molecular mechanisms of normal cellular processes and lipid-related diseases

Date and place: Each Monday 17h15-18h45
Online Zoom;
<https://rwth.zoom.us/j/96946728391?pwd=MFdRaDB1RkhoMUFYa1gx aEJLdDVEUT09>
Please contact hnoels@ukaachen.de for participation