



DEPARTMENT OF MEDICINE, SOLNA

K2F3133 Cardiovascular Research - an Overview of the Process of Atherosclerosis, 1.5 credits (hec)

Hjärt-kärlforskning - Ateroskleros - en översikt av sjukdomsprocessen, 1,5 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus is approved by the The Committee for Doctoral Education on 2023-11-27, and is valid from Spring semester 2024.

Responsible department

Department of Medicine, Solna, Faculty of Medicine

Prerequisite courses, or equivalent

No prerequisite courses, or equivalent, demanded for this course.

Purpose & Intended learning outcomes

Purpose

Atherosclerosis will be discussed from the molecular, cellular, genetic, clinical and epidemiological viewpoints. Therefore, participants with a medical background will have the possibility to be more exposed to experimental work and, conversely, participants with a non-medical background will be enabled to obtain good knowledge of distinct clinical manifestations of atherosclerosis. This will be useful for, among others, bioinformaticians in the field. In addition, the course gives the participants the possibility to network with other students in the cardiovascular field.

Intended learning outcomes

The participant should be able to:

1. Relate risk factors with the pathology of atherosclerosis
2. Discuss the development of the atherosclerotic lesion on cellular and molecular level
3. Motivate the use of different models (in vitro-, epidemiological, animal model) to study atherosclerosis and apply them to a given project.

Course content

Atherosclerosis will be discussed from the molecular, cellular, genetic, clinical and epidemiological viewpoints. Topics to be covered include discussions of the roles of the following in atherosclerosis: lipids and lipoproteins; oxLDL; thrombosis; plaque stability; inflammation; innate and adaptive immunity; proteinases; blood pressure; and diabetes/insulin resistance. Examples of in vitro and animal models as well as clinical studies will be discussed.

Forms of teaching and learning

Lectures, project group, presentation by participants.

Language of instruction

The course is given in English.

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Examination is compulsory to pass the course.

Forms of assessment

To pass the course, the participant has to:

- 1) Give a presentation in a seminar and to be able to discuss the different aspects of atherosclerosis with the course leader and the other participants.
- 2) To be able to discuss the other participants' presentations.
- 3) Pass a written exam recapitulating the course's content.

Course literature

Relevant state of the art articles in the field of atherosclerosis published in high impact journals, e.g. NJM, Nature, Circulation, and EJH.