



Course syllabus

Probiotika Probiotics

KLGN01, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED B/K

Date of Decision: 2023-04-18

General Information

Main field: Biotechnology.

Elective Compulsory for: MLIV1

Elective for: B4-lm

Language of instruction: The course will be given in English

Aim

The aim of the course is to describe the gut bacterial flora and how bacteria, associated to man, interact with the host, how administration of specific probiotic bacteria could prevent and counteract disease and how probiotic food could be designed.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

Be able to:

- describe the human intestinal microbiota (bacterial flora) and its function in health and disease.
- describe gut health and the effects of probiotic bacteria on human physiology.
- describe bacterial identification and classification.
- describe industrial design of probiotic foods.

Competences and skills

For a passing grade the student must

Be able to:

- explain and discuss the relation between gut health, intestinal microbiota (bacterial flora), intake of probiotics and impact on health and disease.
- explain and discuss the interaction between probiotic bacteria and food.

Judgement and approach

For a passing grade the student must

Be able to:

- discuss the relation between gut health, intestinal microbiota, intake of probiotic bacteria and impact on health and disease as well as discuss the interaction between probiotic bacteria and food, in a professional way.
- find, evaluate, summarise, and mediate explanations of when, how and why gut health, the intestinal bacterial flora and probiotic bacteria influence the human health status and how to combine probiotics and food components, out of the recourses of the University library and public electronic sources.

Contents

The following sections are dealt with in the course: Fundamental biological troubleshooting; bacterial systematics and methods to classify and identify bacteria; the importance of gut health; the composition and ecology of the bacterial flora of the gastro-intestinal tract; effects of probiotics in health and disease; immunological and genomical aspects of probiotics; probiotic mechanisms of action; probiotic interaction with dietary fibres and antioxidants; design of probiotic foods and supplements; patent search; food hygienic considerations and safety of probiotics.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Group discussions, individual written exam. Oral and written practical reports. Final grade based on written exam.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Assumed prior knowledge: KMBA01/KMB060 Microbiology.

The number of participants is limited to: No

The course overlaps following course/s: KLG070

Reading list

- Molin, G : Lectures in probiotics. 2013. Electronic PDF-file; free of charge.
- Scientific articles and electronic resources of relevance for the course content.

Contact and other information

Course coordinator: Åsa Håkansson, asa.hakansson@food.lth.se

Course homepage: <https://www.ple.lth.se/en/>