

Syllabus

for course at advanced level

Recombinant Peptides and Proteins
Rekombinanta peptider och proteiner

15.0 Higher Education
Credits
15.0 ECTS credits

Course code:	KN7003
Valid from:	Autumn 2007
Date of approval:	2006-09-27
Department	Department of Biochemistry and Biophysics
Subject	Chemistry
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University.

Prerequisites and special admittance requirements

The course Neurochemistry with Molecular Neurobiology (KN7001) ECTS 15, or Biochemistry II – from gene to function (KB5001) ECTS 15, or a Bachelor of Science in Molecular Biology (or corresponding courses) including at least 30 ECTS in Chemistry. Also required is knowledge equivalent to the Swedish upper secondary school course English B.

Course structure

Examination code	Name	Higher Education Credits
N703	Recombinant Peptides and Proteins	15
TEOR	Theory	7.5
LABO	Laboratory exercises	6
LITT	Literature seminar	1.5

Course content

- The course covers the construction of synthetic genes for expression of biologically important proteins/peptides in *E. coli*, oligonucleotide synthesis, cloning and transformation of *E. coli*, identification of positive clones and DNA sequencing of these. Induction experiments and identification of the gene product are elucidated. Expression in mammalian cells and identification of gene products by immunological methods are presented.
- The course includes the following elements:
 - Theory 7.5 higher education credits.
 - Laboratory exercises 6 higher education credits.
 - Literature seminar 1.5 higher education credits.

Learning outcomes

It is expected that the student after taking the course will be able to:

- Demonstrate basic knowledge about gene design, using polymerase chain reaction (PCR).
- Give an account of the most important gene expression systems in microorganisms and mammal cells.
- Carry out all stages, from design of gene product to its production, using microorganisms.
- Express genes and identify gene products in mammalian cells.

Education

The education consists of lectures, group work, seminars, reports and laboratory exercises.

Participation in the practical laboratory work, reporting literature assignment and group education associated with this is compulsory.

After consultation with the relevant teacher, an examiner may rule that a student is not obliged to participate in certain compulsory education, if there are special grounds for this

Forms of examination

a. Measurement of knowledge takes place through:

- Written and/or oral examination

b. Grading is carried out according to a 7-point scale related to learning objectives:

A = Excellent, B = Very Good, C = Good, D = Satisfactory,

E = Sufficient Fx = Fail F = Fail.

c. Grading criteria for the course will be distributed at the start of the course.

d. A minimum grade of E is required to pass the course, together with:

- A "Sufficient" grade for written/oral laboratory exercise reports and literature task, and

- Participation in other compulsory education.

e. Students who fail to achieve a pass grade in an ordinary examination have the right to take at least further four examinations, as long as the course is given. The term "examination" here is used to denote also other compulsory elements of the course. Students who have achieved a pass grade on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who have failed to reach a pass grade on two occasions have the right to request that a different teacher be appointed to set the grade of the course. A request for such appointment must be sent to the departmental board.

Interim

Students may request that the examination is carried out in accordance with this syllabus even after it has ceased to apply. This right is limited, however, to a maximum of three occasions during a two-year-period after the end of giving the course. A request for such examination must be sent to the departmental board.

Limitations

The course may not be included in a degree together with KE3820 (Recombinant Peptides and Proteins) or equivalents.

Misc

The course is a component of the Master's programme in Neurochemistry with Molecular Neurobiology and the Master's programme in Peptide and Protein Chemistry, and it can also be taken as an individual course. The course may be taught in English.

Required reading

Course literature is decided by the departmental board and is described in an appendix to the syllabus.