



Intracellular Delivery and Targeting of Nanoparticles - course

Time: October 23-25, 2012

Location: University of Eastern Finland, Kuopio Campus

Organizer: University Researcher Marika Ruponen
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Course description:

The aim of the course is to provide an overview of the intracellular delivery and targeting of nanoparticles. The focus in the course is to introduce the basics of the methods used to study endocytosis pathways and intracellular trafficking and show some examples how methods have been applied in nanoparticle research.

Lecturers:

Professor Kirsten Sandvig, University of Oslo, Norway

Professor Kai Simons, Max Planck Institute of Molecular Cell Biology and Genetics, Germany

Senior Researcher Katrien Remaut, University of Ghent, Belgium

Adjunct Professor Annakaisa Haapasalo, University of Eastern Finland

Post-doc researcher Teemu Ihalainen, University of Tampere

Lecturer Sanna Pesonen-Seppänen, University of Eastern Finland

University Researcher Marika Ruponen, University of Eastern Finland

PhD student Polina Iina, University of Helsinki

Target group:

The course is intended for graduate students in Pharmacy and related fields. The course is free for all the graduate students and the researches in the universities. Accommodation and meals are not provided by the organizers. The course fee for people working in the industry or regulatory agencies is 300 EUR.

Registration:

Registration to the course occurs via via web-page

<http://elomake.joensuu.fi/lomakkeet/4592/lomake.html>

Language: English

Credit:

The course is equivalent to 1.0 ECTS-credits. The credits are obtained after participating lectures and passing exam.

Funding:

The course is funded by the FinPharma Doctoral Program - Pharmacy section (FPDP-P). FPDP is a joint organization of previous FinPharmaNet, a network of Finnish Graduate Schools for pharmaceutical research, clinical drug research, drug discovery and toxicological research.

Preliminary Course program:

Tuesday 23.10.2012

Registration : Registration desk is found in the entrance hall of Canthia building (B door). The desk will be open from 8.00 to 9.00.

Lectures in Lecture hall ML3, Medistudia building

9.00-9.15 Opening remarks
Marika Ruponen

9.15-10.15 Basics of cell biology – the function and structure of cell compartments
Sanna Pesonen-Seppänen

10.15-10.30 Break

10.30-11.30 Basics of cell biology – the function and structure of cell compartments
Sanna Pesonen-Seppänen

11.30-12.30 Lunch

12.30-13.30 Endocytosis pathways
Kirsten Sandvig

13.30-13.45 Break

13.45-14.45 Methods to study endocytosis in nanoparticle delivery
Kirsten Sandvig

14.45-15.00 Break

15.00-15.30 Genetic block of endocytotic pathways reveals differences in the
intracellular processing of non-viral gene delivery systems
Polina Ilina

Wednesday 24.10.2012

Lectures in Lecture hall L22, Snellmania building

9.15-10.15 Basics of confocal microscopy
Teemu Ihalainen

10.15-10.30 Break

10.30-11.30 Basics of confocal microscopy
Teemu Ihalainen

11.30-12.30 Lunch

After lunch the lectures continue in the auditorium of Mediteknia building (MET)

12.30-14.00 Basic principles of Fluorescence Correlation Spectroscopy (FCS) and
Single Particle Tracking (SPT)
Katrin Remaut

14.00-14.30 Break

14.30-16.00 FCS and SPT to study the intracellular kinetics of non-viral gene delivery nanoparticles

Katrin Remaut

Thursday 25.10.2012

First lecture in Lecture hall ML3, Medistudia building

8.30-9.45 Basic principle of electronmicroscopy

Speaker to be announced later

9.45-10.00 Break

Lectures in the auditorium of Mediteknia building (MET)

10.00-10.45 Cell organelle isolation

Annakaisa Haapasalo

10.45-11.00 Break

11.00-12.00 Intracellular kinetics of non-viral nanoparticles by using nuclear isolation and q-PCR

Marika Ruponen

12.00-13.00 Lunch

13.00-14.00 Subcellular targeting strategies

Kai Simons

14.00-14.15 Break

14.15-15.15 Subcellular targeting strategies

Kai Simons