



Industrial Biotechnology - for non-biotechnologists

April 5 - 7, 2017

At Hotel Phoenix Copenhagen
in the Heart of Copenhagen, Denmark

Outcome

Through presentations, exercises and plenary discussions participants will acquire solid knowledge of fundamental biochemistry and molecular biology and obtain an understanding of essential methods used in the biotech industry. The course provides the participants with the necessary background needed to further understand the development and production of a biotech product.

Main subjects taught in the course

(see also last pages of flyer for the detailed program)

- The cell - a small factory
- Understanding Proteins - their function, structure and stability
- Industrial use of Enzymes
- DNA and the gene
- Translating DNA into a functional protein
- Genetic modification and recombination
- Industrial Protein engineering – how to design a protein
- Amplification of DNA – the Polymerase Chain reaction (PCR)
- Industrial Production of proteins
- Organisms used for industrial production

Target group

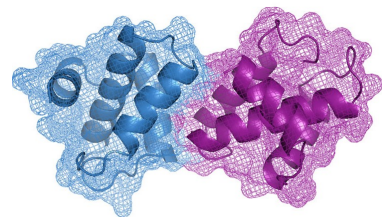
The course addresses technicians as well as product and process engineers working in the biotech, pharmaceutical and/or food industry who would like to understand the fundamentals of biochemistry and molecular biology.

Form

The course runs for three consecutive days with alternating presentations, exercises and plenary discussions. The course is held in English.

Course dinner

On the evening of the first day the participants are invited to a course dinner at a nearby restaurant in the heart of Copenhagen.



Registration and further information: Please see the next pages

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Teachers

Pernille Ollendorff Hede, M.Sc. (Biochemistry), Ph.D.



- 10 years experience within industrial Protein Engineering
- Teaching experience from the University of Copenhagen
- Master of science in Biochemistry, Ph.D.
- Contact: pthd@seydlitz.dk

Ditte Marie Kjær Lomholt, M.Sc. (Biochemistry)



- 6 years experience within teaching biotechnology to non-biotechnologists
- Experience in business development
- Master of science in Biochemistry
- kostochkemi@gmail.com

Guest speakers from



Venue

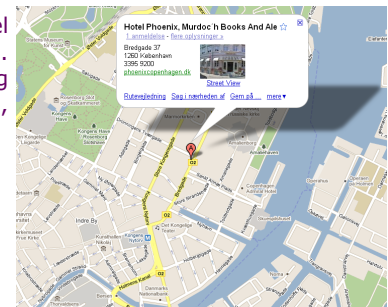


Hotel Phoenix Copenhagen is a 4-star deluxe hotel housed in one of Copenhagen's historic buildings. Situated in central Copenhagen, near Amalienborg Palace, just a few metres' walk from Nyhavn, Kongens Nytorv, Strøget and other sights.

Address: **Bredgade 37, DK-1260 Copenhagen K, Denmark**

Telephone: **+45 33 95 95 00**

Booking & service: **bookphoenix@arp-hansen.dk**



Fee

The course fee is payable in advance and includes course materials, coffee & refreshments, lunch all three days and dinner on the first evening.

Per delegate EUR 1795,- plus VAT. VAT is reclaimable.

Overnight stay at the delegates own expense can be arranged at the course venue or elsewhere nearby. Please contact Hotel Phoenix Copenhagen at **+45 33 95 95 00** or **bookphoenix@arp-hansen.dk**.

Kindly note that central Copenhagen is very popular in spring time and that Copenhagen hotels may be fully booked well in advance.

Registration

Binding registration at **www.powderinfonews.com** under "Courses" no later than 28th of January 2017. In case of any questions please contact **info@seydlitz.dk** or phone **+45 30 79 03 36**.

The course may be subject to cancellation in case of too few participants

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Course contents

Day 1:	Subject
10.00 - 10.15	<u>Course introduction</u>
10.15 - 12.00	<u>The Cell - a small factory</u> The smallest living unit Different cell types, Prokaryotes vs. eukaryotes Organisation of the cell, the nucleus and organelles
12.00 - 13.00	Lunch
13.00 - 15.15	<u>Understanding Protein function and stability</u> What is a protein The structure of proteins What is keeping proteins together or making them fall apart Factors defining Protein Stability Folding, modification and degradation of proteins Protein function
15.15 - 16.00	<u>Industrial use of enzymes</u> What is an enzyme Enzyme specificity and activity Regulation of enzymes
16.30 - 21.30	Course dinner in Nyhavn
Day 2:	Subject
9.00 – 10.30	<u>DNA and the gene</u> What is DNA Definition of a gene DNA replication
10.30 – 12.00	<u>Translating DNA into a functional Protein</u> The genetic code - the code of life Transcription and translation Protein synthesis
12.00 – 13.00	Lunch
13.00 – 16.00	<u>Industrial Protein Engineering, how to design a protein.</u> Cloning and recombination Producing DNA – the Polymerase Chain Reaction (PCR) Site directed mutagenesis Random mutagenesis

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Course contents - continued

Day 3:	Subject
9.00 – 10.30	<u>Industrial Protein Engineering</u> Sequence analysis of cloned DNA Bioinformatics
10.30 – 12.00	<u>Industrial Production of proteins</u> Using single cells as small protein factories Intracellular vs. extracellular expression Protein secretion
12.00 – 13.00	Lunch
13.00 – 14.30	<u>Fungal expression</u> - by guest speaker from Novozymes Aspergillus oryzae and Aspergillus niger Yeast as expression host
14.30 – 15.45	<u>Bacterial and mammalian expression</u> - by guest speaker from Novo Nordisk Bacillus and E.coli expression Mammalian expression systems
15.45 – 16.00	Final remarks, Course evaluation

