



# Industrial Biotechnology - for non-biotechnologists

April 10 - 12, 2019

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 enables participants to better understand and communicate with their R&D colleague's and partners, by providing participants with the necessary background needed to understand the development and production of a biotech product.

## Main subjects taught at the course

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

- The cell - a small factory
- Understanding Proteins - their function, structure and stability
- What is an enzyme
- 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

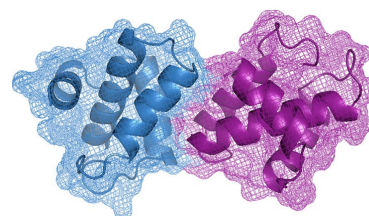
The course addresses chemical engineers, technicians, product and process engineers as well as all others working in the biotech, pharmaceutical and/or food industry who would like to understand the fundamentals of biochemistry and molecular biology.

## 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: pohe@seydlitz.dk

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



- 8 years experience within teaching biotechnology to non-biotechnologists
- Experience in business development
- Master of science in Biochemistry
- dittemariekj@hotmail.com

## Venue



## Guest speaker

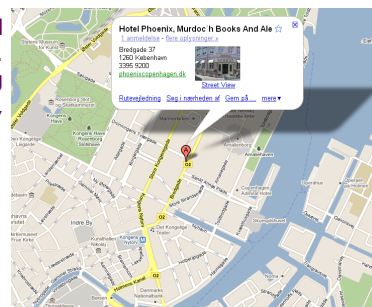
GlycoSpot

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 minutes' 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 1895,- 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 February 24<sup>th</sup> 2019. 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>Enzymes</u> What is an enzyme Enzyme specificity and activity Where are enzymes used industrially?
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 Case study - Optimization of an enzyme

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## Course contents - continued

Day 3:	Subject
9.00 – 10.00	<u>Industrial Protein Engineering</u> Sequence analysis of cloned DNA Bioinformatics
10.00 – 11.00	<u>Industrial use of enzymes</u> Classification of enzymes Enzyme applications Safety and regulations
11.00 – 12.00	<u>New enzyme assay technologies for industrial use</u> Guest Speaker from GlycoSpot
12.00 – 13.00	Lunch
13.00 – 15.00	<u>Industrial Production of proteins</u> Using single cells as small protein factories Intracellular vs. extracellular expression Fungal expression Bacterial and Mammalian expression
15.00 – 15.45	Wrap up – connecting all the dots and drawing the full picture
15.45 – 16.00	Final remarks, Course evaluation

