



Presented by
Management Forum

Protein Engineering for Pharmaceutical Biotechnology

10-11 September 2025
+ 21-22 January 2026

Advance your expertise in protein engineering with this comprehensive course. Learn cutting-edge techniques in therapeutic development, biotechnology applications, and regulatory compliance, ideal for professionals in pharmaceutical and industrial sectors.



Format:
Live online



CPD:
12 hours for your records



Certificate of completion

Course overview

Enhance your knowledge in protein engineering to understand how to advance therapeutic development and industrial applications.

Protein-based therapeutics have significantly advanced and created new paradigms in disease treatment. Half of the top ten selling drugs in 2023 are protein-based therapeutics.

Protein engineering, a field perfected by nature over billions of years, can now be replicated and customised in the laboratory within weeks. This course aims to equip professionals with the skills to develop more valuable and better-featured proteins, particularly enzymes, for a wide range of pharmaceutical applications. By understanding and applying the latest advancements in molecular biology, protein chemistry, enzymology, and structural chemistry, attendees will be able to create practical solutions that meet the needs of the pharmaceutical sector. The significance and timelessness of this training are underscored by the 2018 Nobel Prize for Chemistry, awarded for groundbreaking work in protein engineering, highlighting its growing importance and potential to revolutionise various industries.

Benefits of attending

- **Deepen** your understanding of protein engineering concepts, enhancing your expertise in molecular biology, protein chemistry and enzymology.
- **Stay updated** with the latest advancements in protein engineering, including CRISPR-Cas9 gene editing, phage display for protein-protein interactions, and mRNA therapeutics, keeping you at the forefront of the field.
- **Explore** the development and application of protein-based therapeutics such as bispecific antibodies, antibody fragments, mRNA vaccines, antibody-drug conjugates, and antibody-directed enzyme pro-drug therapy.
- **Discover** how protein engineering is used in biotechnology, including the development of genetically modified organisms (GMOs), biopharmaceuticals, directed evolution for enzyme production, and industrial enzymes.

Who should attend?

This course is designed for professionals with a foundational understanding of biochemistry and molecular biology, seeking to deepen their knowledge and understanding in protein engineering, including:

- Biotechnology professionals
- Regulatory affairs professionals
- Pharmaceutical development specialists
- Quality assurance and control officers
- Clinical researchers
- Process development engineers
- Project managers

Programme

Day 1

Protein engineering in basic and pharmaceutical biotechnology I

- Theory and different techniques for protein engineering
- Engineering Enzymes
- Engineering Antibodies
- Engineering single molecules
- Engineering stability and specificity
- General safety percussion and Regulatory considerations for protein Engineering techniques, focusing on compliance with international standards (e.g. FDA, EMA)
- Discuss the regulatory pathways for approval of newly modified proteins or Enzymes

Protein Engineering in basic and pharmaceutical Biotechnology II

- Outline of recombinant protein production and purification in Escherichia coli.
- From Gene to protein to patients

Some Practical Skills in Protein Engineering

- DNA shuffling, rational design and other techniques for protein engineering
- Basic techniques such as gel electrophoreses isolation of DNA and many other
- Molecular cloning
- PCR
- Immunoblotting
- Protein purification
- Protein and DNA characterisation
- Principles of Good Laboratory Practice and Good Manufacturing Practice and their importance in protein Engineering research and pharmaceutical production.

Protein Engineering for Affinity Purification and Tags Used I

Day 2

Recent Breakthroughs in Protein Engineering

- Recent developments in engineering protein-protein interactions using phage display
- CRISPR-Cas9 gene editing and its applications in pharmaceutical research
- Engineering protein-based therapeutics through structural and chemical design
- Regulatory landscape for CRISPR-Cas9
- Recent FDA and EMA guidelines on these technologies

Therapeutic application of Protein engineering

- Bispecific antibodies
- Antibody fragments
- mRNA therapeutics (mRNA vaccines)
- Antibody-drug conjugates
- Antibody-directed enzyme pro-drug therapy

Protein Engineering and Biotechnology

- Genetically modified organisms (GMOs)
- Development of biopharmaceuticals
- Directed evolution for enzyme production
- Industrial enzymes
- Regulatory requirements for GMOs, biopharmaceuticals, and industrial enzymes

Application of protein engineering discussion

Discussion and critical analysis of the eight most recent research articles on the application of Protein engineering, including our own research on protein engineering, highlighting how regulatory science impacts the development and approval of new or modified products



Sayed Goda

Sayed K Goda, a biochemistry and drug discovery professor, has a robust academic background. He earned a BSc in Chemistry and an MSc in organic chemistry from Cairo University, Egypt. He then pursued a PhD in Biochemistry from the University of Southampton, UK. Recognising the pivotal role of technology management in his field, he obtained an MBA in technology management from the Open University, UK, in 2000. His diverse educational background equips him with a unique perspective and a broad range of skills, making him a valuable asset in the field of biochemistry and drug discovery.

After completing his PhD, Sayed embarked on a leadership journey at the Porton Down establishment in Salisbury, UK, where he served for fourteen years as a senior scientist and a team leader. During that time, he led commercial and medically sensitive research. He employed protein engineering to produce novel commercially and medically important proteins.

In 2002, Sayed's academic prowess and leadership skills led him to a professor position at Cairo University, Egypt. His tenure was marked by transformative contributions, notably the establishment of a new BSc Biotechnology program. He also supervised many successful MSc and PhD degrees.

In 2006, Dr. Goda accepted a professor position at Qatar University, Qatar, where he taught many major courses in biochemistry and biotechnology and successfully obtained many research grants.

In 2012, Sayed's expertise and reputation led him to a senior scientist and Professor position at the Antidoping laboratory in Qatar. He led research in various fields and established a protein engineering laboratory here. His exceptional ability to secure research funds, totalling over two million, for cancer-targeting drug discovery projects. His collaboration with Groningen University, Netherlands, resulted in the successful completion of four Ph. Ds and numerous publications, further solidifying his status as a prolific researcher.

Sayed has years of commercial and medical research experience in a conventional research institute in the UK.

He is also a regular reviewer for many high-impact journals, and he is currently a guest editor for Cancers.

Course dates

10-11 September 2025 **Live online**

09:30-16:00 **UK (London)** (UTC+01)

Course code 15503

GBP **1,299** ~~1,499~~

EUR **1,819** ~~2,099~~

USD **2,087** ~~2,399~~

Until 06 Aug

21-22 January 2026 **Live online**

Course code 15504

GBP **1,299** ~~1,499~~

EUR **1,819** ~~2,099~~

USD **2,087** ~~2,399~~

Until 17 Dec

How to book



Online:

ipi.academy/2793

Alternatively contact us to book, or if you have any queries:



Email:

info@ipiacademy.com



Phone:

[+44 \(0\)20 7749 4749](tel:+442077494749)

Discounts

- Booking more than one delegate on any one date qualifies for a **30% discount** on the second and subsequent places.
- Most events qualify for an **early booking discount** prior to 6 weeks before the course date. Be sure to check on our website, where the latest discounts will be shown.

Further information

Fee

The fee includes all meals and refreshments for the duration of the course (for venue-based courses) and a complete set of course materials (provided electronically). If you have any particular requirements, please advise customer services when booking.

Please note

IPI Academy (and our training partners) reserve the right to change the content and timing of the programme, the speakers, the date and venue due to reasons beyond their control. In the unlikely event that the course is cancelled, we will refund the registration fee and disclaim any further liability.

Terms and conditions

The rest of our terms, the event cancellation policy and the terms and conditions are on our website, please visit ipi.academy/content/terms-and-conditions

Run this programme in-house for your whole team

Coming to IPI Academy for your in-house training provides an all-inclusive service which gives you access to a wide variety of content, learning platforms and delivery mechanisms as well as your own personal training adviser who will work with you from the initial enquiry through to feedback and follow-up after the programme.

With over 600 trainers, all practitioners and experts across a huge range of fields, we can provide the training you need, where you need it, when you need it, and at a price which suits your budget. Our approach to tailored learning and development consists of designing and delivering the appropriate solution for each client.

For your FREE consultation and to find out more about how we can work with you to solve your training needs, please contact our training advisers:



ALEKSANDRA BEER

Tel: +44 (0)20 7749 4749

Email: inhouse@ipiacademy.com



YESIM NURKO

Tel: +44 (0)20 7749 4749

Email: inhouse@ipiacademy.com



IPI
Academy

IPI Academy is a training initiative of Falconbury and Management Forum; leading providers of industry training for over 30 years, based in the UK.

10-12 Rivington Street
London EC2A 3DU

ipi.academy

Tel: +44 (0)20 7749 4749

Email: info@ipiacademy.com