



## An Introduction to Pharmaceutical Biotechnology offered by Utrecht University

This course starts with the introduction of several biopharmaceutical products (BPs) that are currently on the market and then describes how the drug substances present in these products were actually obtained and produced by means of living cells. Topics such as gene cloning, cell line development, bioprocessing, and downstream purification methods will be discussed as well as formulation and delivery issues of recombinant proteins and nucleic acids. Furthermore, attention will be given to the registration process of BPs as well as to the cost-benefit analysis and the socio-economic impact these often pricy drugs might have.

### Learning objectives

By the end of this course, you will be able to:

- ✓ Sum up the main milestones in the history of biotechnology and pharmaceutical biotechnology in particular
- ✓ Distinguish different categories of biopharmaceutical products (BPs)
- ✓ Analyse and explain the structural organisation of BPs
- ✓ Set up a molecular cloning strategy for the recombinant production of therapeutic proteins in cells
- ✓ Explain the basic issues on protein stability and how this can be influenced through proper formulation
- ✓ Explain how biopharmaceutical aspects of BPs can be influenced
- ✓ Describe the procedure for getting BPs registered
- ✓ Rationally choose the appropriated host cell system for the large-scale production of protein-based BPs

[Visit our course page to find out more about this course.](#)

### For whom?

- ✓ (Bio)medical researchers
- ✓ PhD candidates
- ✓ Academics

### Facts

- ✓ 10 ECTS
- ✓ 8 May 2017 to 2 Jul 2017
- ✓ Online
- ✓ 13 hrs/week workload
- ✓ 1450 Euros
- ✓ English
- ✓ Web lectures, individual assignments, group assignments

### You may be also interested in

- ✓ [Pharmacoepidemiology and Drug Safety](#)

### Offered by



Utrecht University