Universität Regensburg

FAKULTÄT
CHEMIE UND PHARMAZIE
Institut für Pharmazie

Fundamentals of Biotechnology

Lecture-Nr.: 53842
Type: lecture
Duration: 2 hours per week (summer)
Method of Assessment: written examination (in combination with lab course "Biochemical Methods including Clinical Chemistry" and lectures "Selected Topics in Biochemistry / Introduction to Clinical Chemistry" and "Introduction to Biotechnology")
ECTS Credit Points: 2

Topics:
Definitions, origins and timeline, scope of biotechnology, microorganisms as protagonists in biotechnology, principles of microbiology and cell biology, growth characteristics of microorganisms, critical parameters, inactivation of microorganisms, fermentation types and product formation, large-scale culture of microorganisms, production of primary metabolites, biotechnologically relevant enzymes, production of secondary metabolites, microbial transformations. Recombinant DNA technology. Production of therapeutic proteins.

Literature:
1. Ratledge; Kristiansen: Basic Biotechnology. Cambridge University Press, Cambridge.
2. Glazer; Nikaido: Microbial Biotechnology: Fundamentals of Applied Microbiology.
3. Cambridge University Press, Cambridge.
4. Kreis; Baron; Stoll: Biotechnologie der Arzneistoffe: Grundlagen und Anwendungen. Deutscher Apotheker Verlag, Stuttgart.
5. Schmid: Taschenatlas der Biotechnologie und Gentechnik. Wiley-VCH, Weinheim.
6. Dingermann; Winckler; Zündorf: Gentechnik, Biotechnik: Grundlagen und Wirkstoffe. Wissenschaftliche Verlagsgesellschaft, Stuttgart.

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