therapeutics, diagnostics, supplies or additives. Traditionally these biological agents have been microorganisms, grown under controlled environment conditions on a suitable substrate. Typical pharmaceutical biotechnological products thus are antibiotics, steroids, vaccines, diagnostics and recombinant proteins. However, the term biotechnology has also been used if current scientific methods and techniques were applied to modify and improve a given biological system. The rapid development in molecular biology is an important driving force of modern drug discovery and clinical application. As a consequence, from time to time we need comprehensive updates reviewing the recent developments in the field. The editors of "Pharmaceutical Biotechnology" have accomplished this challenge to a high standard in the 3rd edition of their textbook which was revised and extended in many parts to reflect and emphasize trends and advances in pharmaceutical biotechnology. This undergraduate textbook is intended for pharmacists and pharmaceutical scientists in academia and industry and may also be informative for other readers interested in fundamentals and recent developments in the areas of pharmaceutical and medicinal biotechnology. The text explains both the basic science and the development and application of novel biotechnology-produced pharmaceuticals, with special emphasis on their clinical use as well. The book is divided into 24 chapters each authored by experts in the respective field covered. It includes the following chapters: 1. Molecular Biotechnology, 2. Biophysical and Biochemical Analysis of Recombinant Protein Structure and Analysis of Proteins, 3. Production and Downstream Processing of Biotech Products, 4. Formulation of Biotech Products, Including Biopharmaceutical Considerations, 5. Pharmacokinetics and Pharmacodynamics of Peptide and Protein Drugs, 6. Immunogenicity, 7. Genomics, Proteomics and Additional Biotechnology-related Techniques, 8. Gene Therapy, 9. Oligonucleotides and siRNA,10. Hematopoetic Growth Factors, 11. Interferons and Interleukins, 12. Insulins, 13. Growth Hormones, 14. Recombinant Thrombolytics and Coagulation Factors, 15–18. Monoclonal Antibodies, 19. Recombinant Human Deoxyribonuclease, 20. Follicle-stimulating Hormone, 21. Vaccines, 22. Dispensing Biotechnology Products, 23. Economic Considerations in Medical Biotechnology, and 24. Regulatory Issues and Drug Product Approval for Biopharmaceuticals. All chapters are well structured, easy to read and well illustrated. The potential purchaser and reader may be interested in what has changed since the 2nd Edition of 2002. The general chapters (1–5) remained nearly unchanged, including some errors (p. 51, the drawing of the airlift bioreactor is still incomplete). Chapter 6 is a new one, presenting and discussing the immunogenicity of therapeutic proteins. The chapters on monoclonal antibodies are completely reorganized and were divided into one general chapter and three chapters dealing with important applications (cancer, organ transplantation, inflammation). Finally, dispensing of biotechnological therapeutics, as well as regulatory and economic considerations now each has its own chapter. The literature survey is up-to-date. For example, the chapter on "Gene Therapy" (contributed by M.A. Croyle) cites 185 publications, 85 of which were published between 2005 and 2007, in the short chapter on "Oligonucleotides" (contributed by R.M. Schiffelers and E. Mastrobattista) 26 out of 43 references are newer than 2004. Self-assessment questions, which could be found at the end of most chapters of the 2nd Edition, were omitted in the 3rd Edition. In summary, this textbook comprehensively covers the basic science and clinical uses of novel biotechnology-derived pharmaceuticals and the paperback edition (£ 50) may even be affordable for students at Pharmacy and Medical Schools. Hence, this book may serve as an appropriate source for classroom use as well as for professional reference and further education.

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M.S. Roberts, K.A. Walters, (Ed.), Recension of the Book: Dermal Absorption and Toxicity Assessment, second ed. Informa Healthcare, 2007. ISBN-13: 9780849375910.

The second edition of this book provides again a decent overview on the current knowledge about dermal absorption and toxicity assessment. It contains a collection of articles dealing with all topics necessary to work with skin of different species and for various applications: from the morphology over *in vitro* test methods to *in vivo* test methodologies comprising formulation issues. This includes description of contact dermatitis and the corresponding impact of transdermal drug delivery systems and the toxic effects after absorption of substances. In addition the book provides detailed insight in approaches gaining more momentum right now and that will be of high impact in the near future. Methodologies to avoid animal testing as well as sophisticated *in silico* models to predict the penetration and toxicological effect of chemicals are also included. Several different approaches are sketched and weighted. This is also discussed with respect to regulatory affairs which are presented form different authorities. In this context, increasing relevance will be given to metabolic processes in skin in the near future what is reflected as well in two chapters of the book. The book is closed with some special examples regarding skin penetration and absorption for substances from different application fields.

What strengthens the book is the room it gives to contradicting arguments highlighting the actual discussions in the scientific community.

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