

Published books:

“Isolation, cloning and sequencing of the Respiratory Operon of *Rhodobacter capsulatus* and the development of a general applicable system for the homologue expression of difficult-to-express proteins”. Hieronymus Verlag, München. ISBN 3-933083-23-0.

“Modern Biopharmaceuticals - Design, Development and Optimization”. Volumes I to IV. Editor: J. Knäblein. Publisher: Wiley-VCH. ISBN 3-527-31184-X.

Invited Editor for the twelve volume reference book and comprehensive treatise “Biotechnology”. Publisher: Wiley-VCH. ISBN-10: 3-527-28310-2

Published book chapters:

“Biopharmaceuticals expressed in plants – a new era in the new Millennium” (2004). In: Applications in Pharmaceutical Biotechnology. Editors: R. Müller & O. Kayser, **pp. 35-56**. Publisher: Wiley-VCH. ISBN 3-527-30554-8.

“Plant-based Expression of Biopharmaceuticals” (2005). In: Meyers, R. A. (Ed.): Encyclopedia of Molecular Cell Biology and Molecular Medicine, 2nd ed., Vol. 10, **pp. 489-410**. Publisher: Wiley & Sons. ISBN 3-527-30552-1.

Together with Yuri Gleba: “Production of recombinant proteins in plants” (2005). In: Modern Biopharmaceuticals - Design, Development and Optimization. **pp. 893-917**; Editor: J. Knäblein. Publisher: Wiley-VCH. ISBN 3-527-31184-X.

“Executive Summary: Modern Biopharmaceuticals – A new Era in the New Millennium” (2005). In: Modern Biopharmaceuticals - Design, Development and Optimization. **pp. 1-112**; Editor: J. Knäblein. Publisher: Wiley-VCH. ISBN 3-527-31184-X.

“Pflanzliche Expressionssysteme – eine “reife” Technologieplattform” (2006). In: Biotechnologie für Einsteiger. **pp. 196**; Editor: R. Renneberg. Publisher: Elsevier GmbH, München. ISBN 3-8274-1538-1.

“Gentechnische Grundlagen für biotechnologische Anwendungen” (2007). In: Molekulare Medizin; Editors: D. Ganten and K. Ruckpaul. Publisher: Springer (in press)

“Foreword” (2006). In: Medicinal Plant Biotechnology – From Basic Research to Industrial Applications. Editors: O. Kayser and W. J. Quax. Publisher: Wiley-VCH, Weinheim ISBN 3-527-31443-1

“Plant-based Expression of Biopharmaceuticals” (2006). In: Meyers, R. A. (Ed.): Proteins – From Analytics to Structural Genomics, **pp. 537 – 563**. Publisher: Wiley-VCH, Weinheim. ISBN 3-527-31608-6

Scientific Papers:

- 1) Knäblein, J., Mann, K., Ehlert, S., Fonstein, M., Huber, R. & Schneider, F. (1996). Isolation, cloning, sequence analysis and localization of the operon encoding dimethyl sulfoxide/trimethylamine N-oxide reductase from *Rhodobacter capsulatus*. *J. Mol. Biol.* **263**, 40-52.
- 2) Schneider, F., Löwe, J., Huber, R., Schindelin, H., Kisker, C. & Knäblein, J. (1996). Crystal structure of dimethylsulfoxide reductase from *Rhodobacter capsulatus* at 1.88 Å Resolution. *J. Mol. Biol.* **263**, 53-69.
- 3) Knäblein, J., Dobbek, H., Ehlert, S. & Schneider, F. (1997). Isolation, cloning, sequence analysis and X-ray structure of dimethyl sulfoxide/trimethylamine N-oxide reductase from *Rhodobacter capsulatus*. *Biol. Chem.* **378**, 293-302.

- 4) Knäblein, J., Dobbek & Schneider, F. (1997). Organization of the DMSO respiratory operon of *Rhodobacter capsulatus* and its consequences for homologous expression of DMSOR/TMAOR. *Biol. Chem.* **378**, 303-308.
- 5) Knäblein, J., Neuefeind, T., Schneider, F., Bergner, A., Messerschmidt, A., Löwe, J., Steipe, B. & Huber, R. (1997). [Ta₆Br₁₂]²⁺, a tool for phase determination of large biological assemblies by X-ray crystallography. *J. Mol. Biol.* **270**, 1-7.
- 6) Neuefeind, T., Bergner, A., Schneider, F., Messerschmidt, A. & Knäblein, J. (1997). The suitability of [Ta₆Br₁₂]²⁺ for phasing in protein Crystallography. *Biol. Chem.* **378**, 219-221.
- 7) Blickling, S. & Knäblein, J. (1997). Feedback inhibition of dihydrodipicolinate synthase enzymes by L-lysine. *Biol. Chem.* **378**, 207-210.
- 8) Sahasrabudhe, S. R., Sun, J. E., Goayl, S., Knäblein, J., Gonzalez-DeWhitt, P., Fortes, M. A., Riedel, N. G. & Hughes, S. R. (1995). Understanding nucleation-dependent aggregation of β-amyloid peptide and combinatorial searches for peptides that interact with β-amyloid. *Soc. Neurosci.* **21**, 1281.
- 9) Hughes, S. R., Watanabe, T., Cheetham, J., Knäblein, J., Buxbaum, J. D., Greengard, P., Riedel, N. G. & Sahasrabudhe, S. R. (1996). β-Amyloid peptide interacts with α-tubulin *in vivo*. *Soc. Neurosci.* **22**, 503.
- 10) Hughes, S. R., Khorkova, O., Goyal, S., Knäblein, J., Heroux, J., Riedel, N. G. & Sahasrabudhe, S. R. (1998). α₂-macroglobulin associates with β-amyloid peptide and prevents fibril formation. *Proceedings of the National Academy of Science (PNAS)* **95** (6), 3275-3280.
- 11) Blickling, S., Beisel, H. G., Bozic, D., Knäblein, J., Laber, B. & Huber, R. (1997). Structure of dihydrodipicolinate synthase of *Nicotiana glauca* reveals novel quaternary structure. *J. Mol. Biol.* **274**, 608-621.
- 12) Neuefeind, T., Huber, R., Reinemer, P., Knäblein, J., Prade, L., Mann, K. & Bieseler, B. (1997). Cloning, sequencing, crystallization and X-ray structure of glutathione S-transferase-III from *Zea mays* var. *mutin*: A leading enzyme in detoxification of maize herbicides. *J. Mol. Biol.* **274**, 577-587.
- 13) Romao, M. J., Knäblein, J., Huber, R. & Moura, J. J. G. (1998). Structure and function of molybdopterin containing enzymes. *Prog. Biophys. Molec. Biol.*, **68**, 121-144.
- 14) Michael Meyer, Gerd Wohlfahrt, Jörg Knäblein & Dietmar Schomburg (1998). Aspects of the mechanism of catalysis of glucose oxidase: A docking, molecular mechanics and quantum chemical study. *J. Computer-Aided Molecular Design*, **12**, 425-440.
- 15) Knäblein, J. (2003). Biotech: A New Era In The New Millennium - Fermentation and Expression of Biopharmaceuticals in Plants. *SCREENING - Trends in Drug Discovery*, **4**, 14-16.
- 16) Knäblein, J. & McCaman, M. (2003). Modern Biopharmaceuticals - Recombinant Protein Expression in Transgenic Plants. *SCREENING - Trends in Drug Discovery*, **6**, 33-35.
- 17) Knäblein, J. (2005). The productive skills of moss and maize - some plants are able to manufacture complex drugs. *LIVINGBRIDGES*, **1/2005**, 10-35.

- 18) Knäblein, J., Pujol, M. & Borroto, C. (2007) "Plantibodies for Human Therapeutic Use - Approval of the Worldwide First Biopharmaceutical from Transgenic Plants is a Major Breakthrough in Medicinal Biotechnology". BioWorld Europe issue 1: 14 - 17.
- 19) Walzer, A., Knäblein, J., Gerbling, K., Tiemann, F., Bunte, T. "Rapid diagnostic method for quantitative testing of < 100 microbes in water". Manuscript Submitted
- 20) Knäblein, J. & McCaman, M. "Expression of biopharmaceuticals in plants: applying tobacco plants to express fully active ADI (Arginine DeIminase)". In preparation.
- 21) Knäblein, J., Dobbek, H., Schneider, F., Leimkühler, S., Klipp, W. & Huber, R. "Development of a general applicable system for homologous expression in *Rhodobacter capsulatus*: Easy one-step purification and removal of the fused tag. In preparation.
- 22) Knäblein, J., Dobbek, H., Schneider, F. & Huber, R. "Site-directed mutagenesis in DMSOR from *Rhodobacter capsulatus*: Characterization of different mutants and their consequences for the catalytic mechanism and electron transfer". In preparation.
- 23) Knäblein, J., Humm, A., Miguel, J. & Huber, R. "Isolation, cloning and sequencing of the gene encoding nitrate reductase from *Desulfovibrio desulfuricans*". In preparation.

Additional publications:

WS 90/91 **Research-semester at Hoechst UK Pharmaceuticals, Milton Keynes, England:** Development of a drug (HP029) against Alzheimer's disease and pharmacological investigations on the metabolites. Establishing a model system in microorganisms to mimic the toxic effects of metabolites.

WS 91/92 **Study report:** Planning, construction and running of a fully functioning biogas plant.

SS 92 **1. Diploma thesis:** Computer aided force-field calculation to model the substrate β -D-glucose into the active site of Glucose Oxidase from *Aspergillus niger* to elucidate the reaction mechanism.

WS 94/95 **2. Diploma thesis:** Isolation and sequence determination of the gene coding for Dimethylsulfoxid Reductase from *Rhodobacter capsulatus*.

SS 95 **Research-semester at Hoechst Pharmaceuticals Inc., Somerville, NJ, U S A:** Investigation on the aggregation behavior of β -Amyloid-peptides ("Alzheimer-protein") and combinatorial search for interacting proteins via the yeast "Two-Hybrid-System".

Patents:

Knäblein, J., Neufeind, T., Bergner, A., Messerschmidt, A. & Huber, R.: Improved method for structure determination of huge biological aggregates in X-ray crystallography. DPA-Nr. 197 27 437, 4-41

Knäblein, J.: PCR-online diagnostics for detection of mycoplasma in fermentation processes using an internal standard and TaqMan PCR.

Knäblein, J., Briel, A.: Target specific molecular imaging by coupling specific antibodies on microbubbles: Construction of pCONjuGATE vector for easy expression of various antibodies ready for conjugation applying a polymer-tag.