

Dr. rer. nat. Diana Humer

diana.humer@outlook.com

Date of birth: 20.05.1984

www.linkedin.com/in/diana-humer

Birth place: Linz, Austria



Education

- 01/18 – 10/21** **PhD program in Biochemical Engineering: Recombinant horseradish peroxidase in enzyme-activated cancer treatment**
Integrated Bioprocess Development Group of Oliver Spadiut; Institute of Chemical, Environmental and Bioscience Engineering; TU Wien
- 11/13 – 09/16** **MSc in Genetics and Molecular Pathology
Emphasis on Microbiology and Biochemistry**
Center for Molecular Biology, University of Vienna
- 03/10 – 10/13** **BSc in Microbiology and Genetics**
University of Vienna

Professional Experience

- since 12/21** **TU Wien**
Post-Doctoral Researcher
- Project lead: Medium scale production of recombinant HRP for Thermo Fisher Scientific
 - Tech Transfer of pharmaceutical production process at LOBA Feinchemie GmbH
 - Team lead: Supervision of PhDs, graduate, undergraduate students and technicians
 - Lab scale development of production processes for recombinant proteins in microbials with several industrial partners
- 01/18 – 11/21** **TU Wien**
Project assistant
- 03/17 – 12/17** **CROMA-PHARMA GmbH**
Research and Development, Process Development Group
- GMP-relevant documentation (Validation, Qualification, SOPs)
 - In-house development of microbiological methods: Biological indicators for the validation of sterilisation programs
 - Microbial growth monitoring
 - Process development and optimization: Hyaluronic acid gels for intradermal treatments
- 03/15 – 12/15** **Max F. Perutz Laboratories, Univ.-Prof. Dr. Udo Bläsi**
Research Associate
- Molecular biological and microbiological techniques
 - Scientific documentation and literature research

10/07 – 10/14 **Millennium Pharmacy, Mag.pharm. Doris Figl OHG**
Commercial employee in the pharmaceutical sector (PKA)

Skills and Qualifications

Grant	Chemical Monthly Fellowship (MoChem) https://stipendien.oeaw.ac.at/en/fellowships/chemical-monthly-fellowship-mochem
USP	Microbial cultivation: shake flasks and bioreactors (<i>E. coli</i> , <i>P. aeruginosa</i> , <i>P. pastoris</i> , <i>S. cerevisiae</i> , <i>K. lactis</i>), strain generation and cloning, site-directed, site-saturation and random mutagenesis
DSP/Analytics	Protein purification, FPLC (ÄKTA chromatography system), Tangential flow filtration, protein refolding, enzymatic assay development, HPLC, Western blot, Northern blot, qPCR, ELISA
Programs	Chromeleon, Lucillus (PIMS), Origin, SigmaPlot
Languages	German: Native speaker English: Fluent

Publications

Ebner, J.; **Humer, D.**; Klausser, R.; Rubus, V.; Pell, R.; Spadiut, O.; Kopp, J. At-Line Reversed Phase Liquid Chromatography for In-Process Monitoring of Inclusion Body Solubilization. *Bioengineering (Basel)* 2021, 8, 78, doi:10.3390/bioengineering8060078.

Ebner, J.; **Humer, D.**; Spadiut, O. Von der Wurzel ins Labor: Meerrettichperoxidase produziert in *E. coli*. *BIOspektrum* 2021, 27, 773-775, doi:10.1007/s12268-021-1660-y.

Humer, D.; Furlanetto, V.; Schruof, A.K.; Wlodarczyk, A.; Kuttke, M.; Divne, C.; Spadiut, O. Potential of unglycosylated horseradish peroxidase variants for enzyme prodrug cancer therapy. *Biomed. Pharmacother.* 2021, 142, 112037, doi:10.1016/j.biopha.2021.112037.

Humer, D.; Spadiut, O. Enzyme prodrug therapy: cytotoxic potential of paracetamol turnover with recombinant horseradish peroxidase. *Monatshefte für Chemie-Chemical Monthly* 2021, 10.1007/s00706-021-02848-x, 1-9, doi:10.1007/s00706-021-02848-x.

Humer, D.; Ebner, J.; Spadiut, O. Scalable High-Performance Production of Recombinant Horseradish Peroxidase from *E. coli* Inclusion Bodies. *Int. J. Mol. Sci.* 2020, 21, 4625, doi:10.3390/ijms21134625.

Kopp, J.; Zauner, F.B.; Pell, A.; Hausjell, J.; **Humer, D.**; Ebner, J.; Herwig, C.; Spadiut, O.; Slouka, C.; Pell, R. Development of a generic reversed-phase liquid chromatography method for protein quantification using analytical quality-by-design principles. *Journal of Pharmaceutical and Biomedical Analysis* 2020, 188, 113412, doi:10.1016/j.jpba.2020.113412.

Humer, D.; Spadiut, O. Improving the Performance of Horseradish Peroxidase by Site-Directed Mutagenesis. *Int. J. Mol. Sci.* 2019, 20, 916, doi:10.3390/ijms20040916.

Humer, D.; Spadiut, O. Wanted: more monitoring and control during inclusion body processing. *World J Microbiol Biotechnol* 2018, 34, 158, doi:10.1007/s11274-018-2541-5.

Patents

- **Methods for producing heme peroxidases** (Application No.: EP20165131.2)
- **Polypeptides with peroxidase activity** (Application No.: EP20165108.0)