

# Curriculum Vitae

## General

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**Name:** Julian Kopp  
**E-mail:** julian.kopp@tuwien.ac.at  
**Tel.:** +43 1 58801 166485  
**Citizenship:** Austria



## Education

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**University Education:** November 2017- August 2020: **PhD degree** at the Christian Doppler Laboratory for Mechanistic and Physiological Methods for Improved Bioprocesses at the University of Technology Vienna, in the team of Prof. Christoph Herwig;

*PhD thesis:* Processing tools and methods to enable continuous biomanufacturing for recombinant protein production with *E. coli*

October 2015 – September 2017: **Master’s degree** in Biotechnology at the University of Natural Resources and Life Sciences, Vienna (BOKU)

*Master thesis:* Challenging the metabolic burden concept - A study of *E. coli* BL21(DE3) [pet30a] and BL21(DE3) [N-pro]

Supervisor: Prof. Christoph Herwig, at the University of Technology Vienna

October 2011 - June 2015; **Bachelor’s degree** in Food science and Biotechnology at the University of Natural Resources and Life Sciences, Vienna (BOKU)

Within Bachelor’s degree: exchange semester at the National University of Galway (NUIG) at the College of Science

*Bachelor thesis:* Glycosyltransferases in *Biomphalaria glabrata*

Supervisor: Prof. Erika Staudacher

**School Education:** 2002-2010; secondary school: “Reithmann gymnasium” in Innsbruck with specific focus on science

1998 – 2002; Primary school in Igls

## Professional career

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**Current employment:** Since September 2020: employed as a project assistant and Post-Doc researcher in the Integrated Bioprocess Development group at the University of Technology Vienna, in the team of Prof. Oliver Spadiut

**Previous employment:** November 2017- August 2020 employed as a Project assistant at the Christian Doppler Laboratory for Mechanistic and Physiological Methods for Improved Bioprocesses at the University of Technology Vienna, in the team of Prof. Christoph Herwig

**Internships absolved:** July-August 2017: Internship at SANDOZ, Austria, Kundl; Department: microbial Upstream processing

August-September 2016: Internship at SANDOZ, Austria, Kundl; Department: microbial Upstream processing

July-August 2015: Internship at SANDOZ, Austria, Kundl; Department: microbial Upstream processing

August 2014: Internship at AGES (Austrian Agency for Health and Nutrition)

February 2013: Internship at AGES (Austrian Agency for Health and Nutrition)

**Civilian service:** 2010 – 2011 at the institution for blind visually impaired people in Tirol

## Competences

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Languages: German (native)

English (C1-level)

French (B1-level)

IT skills: Expertise and proper usages with Origin, Microsoft Office, Matlab, MODDE, ImageJ and Lucillus

Job-related Acquirements: Professional & precise work in molecular biology laboratory, microbiology laboratory and fermentation laboratory

## **Publications and scientific contributions**

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- 07/2022      **Kopp, J.**, Bayer, B., Slouka, C., Striedner, G., Dürkop, M. & Spadiut, O. (2022) Fundamental insights in early-stage inclusion body formation. *Microbial Biotechnology*, 00, 1– 8. Available from: <https://doi.org/10.1111/1751-7915.14117>
- 03/2022      Gundinger, T.; Kittler, S.; Kubicek, S.; **Kopp, J.**; Spadiut, O. Recombinant Protein Production in *E. coli* Using the *phoA* Expression System. *Fermentation* 2022, 8, 181. <https://doi.org/10.3390/fermentation8040181>
- 02/2022      Doppler P, Kriechbaum R, Käfer M, **Kopp J**, Remias D, Spadiut O. Coelastrella terrestris for Adonixanthin Production: Physiological Characterization and Evaluation of Secondary Carotenoid Productivity. *Marine Drugs*. 2022; 20(3):175. <https://doi.org/10.3390/md20030175>
- 02/2022      **Kopp J.**, Spadiut O. (2021) A Guideline to Set Up Cascaded Continuous Cultivation with *E. coli* BL21 (DE3). In: Turksen K. (eds) *Bioreactors in Stem Cell Biology*. *Methods in Molecular Biology*, vol 2436. Humana, New York, NY. [https://doi.org/10.1007/7651\\_2021\\_424](https://doi.org/10.1007/7651_2021_424)
- 12/2021      **Kopp, J.**, Slouka, C., Delvigne, F. and Herwig, C. (2022). Strategies for Continuous Processing in Microbial Systems. In *Process Control, Intensification, and Digitalisation in Continuous Biomanufacturing*, G. Subramanian (Ed.). <https://doi.org/10.1002/9783527827343.ch1>
- 06/2021      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* 8(6):78 (2021); <https://doi.org/10.3390/bioengineering8060078>
- 06/2021      Nguyen, T. M., Telek, S., Zicler, A., Martinez, J. A., Zacchetti, B., **Kopp, J.**, Slouka, C., Herwig, C., Grünberger, A., & Delvigne, F. (2021). Reducing phenotypic instabilities of a microbial population during continuous cultivation based on cell switching dynamics. *Biotechnology and Bioengineering*, 1– 13. <https://doi.org/10.1002/bit.27860>
- 05/2021      Kittler, S., Slouka, C., Pell, A., Lamplot, R., Besleaga, M., Ablasser, S., Herwig, C., Spadiut, O., & **Kopp, J.**; Cascaded processing enables continuous upstream processing with *E. coli* BL21(DE3). *Sci Rep* 11, 11477 (2021). <https://doi.org/10.1038/s41598-021-90899-9>
- 04/2021      Zalai D., **Kopp J.**, Kozma B., Kuchler M., Herwig C., Kager J.; Microbial technologies for biotherapeutics production: Key tools for advanced biopharmaceutical process development and control, *Drug Discovery Today: Technologies*, 1740-6749 (2021), <https://doi.org/10.1016/j.ddtec.2021.04.001>.
- 11/2020      **Kopp, J.**, Kittler, S., Slouka, C., Herwig, C., Spadiut, O., & Wurm, D. J. (2020) Repetitive Fed-Batch: A Promising Process Mode for Biomanufacturing With *E. coli*. *Frontiers in Bioengineering and Biotechnology* 8, 573607. doi: 10.3389/fbioe.2020.573607
- 08/2020      Kittler S, **Kopp J**, Veelenturf PG, Spadiut O, Delvigne F, Herwig C and Slouka C (2020) The Lazarus *Escherichia coli* Effect: Recovery of Productivity on Glycerol/Lactose Mixed Feed in Continuous Biomanufacturing. *Front. Bioeng. Biotechnol.* 8:993. doi: 10.3389/fbioe.2020.00993
- 06/2020      **Kopp, J.**, Zauner, F.B., Pell, A., Hausjell, J., Humer, D., Ebner, J., et al. (2020). Development of a generic reversed-phase liquid chromatography method for protein quantification using analytical quality-by-design principles. *Journal of Pharmaceutical and Biomedical Analysis*, 113412. doi: <https://doi.org/10.1016/j.jpba.2020.113412>.
- 05/2020      Schwaighofer A, Ablasser S, Lux L, **Kopp, J.** et al. Production of Active Recombinant Hyaluronidase Inclusion Bodies from *Apis mellifera* in *E. coli* BL21(DE3) and

characterization by FT-IR Spectroscopy. *Int J Mol Sci.* 2020;21(11):E3881. Published 2020 May 29. doi:10.3390/ijms21113881

02/2020 Metzger KFJ, Padutsch W, Pekarsky A, **Kopp J.** et al. IGF1 inclusion bodies: A QbD based process approach for efficient USP as well as early DSP unit operations. *J Biotechnol.* 2020;312:23-34. doi:10.1016/j.jbiotec.2020.02.014

11/2019 **Kopp, J.**, Slouka C, Spadiut O and Herwig C (2019) The Rocky Road From Fed-Batch to Continuous Processing With *E. coli*. *Front. Bioeng. Biotechnol.* 7:328. doi: 10.3389/fbioe.2019.00328

10/2019 **Kopp, J.**, Kolkmann, A.-M., Veleenturf, P.G., Spadiut, O., Herwig, C., and Slouka, C. (2019b). Boosting Recombinant Inclusion Body Production—From Classical Fed-Batch Approach to Continuous Cultivation. *Frontiers in Bioengineering and Biotechnology* 7, 297.

04/2019 Slouka, C., **Kopp, J.**, Strohmer, D., Kager, J., Spadiut, O., and Herwig, C. (2019). Monitoring and control strategies for inclusion body production in *E. coli* based on glycerol consumption. *J Biotechnol* 296, 75-82. doi: 10.1016/j.jbiotec.2019.03.014.

02/2019: Slouka C, **Kopp J.**, Spadiut O, Herwig C. Perspectives of inclusion bodies for bio-based products: curse or blessing?. *Appl Microbiol Biotechnol.* 2019;103(3):1143-1153. doi:10.1007/s00253-018-9569-1

11/2018 **Kopp, J.**, Slouka, C., Strohmer, D., Kager, J., Spadiut, O., and Herwig, C. (2018). Inclusion Body Bead Size in *E. coli* Controlled by Physiological Feeding. *Microorganisms* 6(4). doi: 10.3390/microorganisms6040116.

09/2018 Slouka, C., **Kopp, J.**, Hutwimmer, S., Strahammer, M., Strohmer, D., Eitenberger, E., et al. (2018). Custom made inclusion bodies: impact of classical process parameters and physiological parameters on inclusion body quality attributes. *Microb Cell Fact* 17(1), 148. doi: 10.1186/s12934-018-0997-5.

09/2017 Slouka, C., Brunauer, G.C., **Kopp, J.**, Strahammer, M., Fricke, J., Fleig, J., Herwig, C. (2017). Low-frequency electrochemical impedance spectroscopy as a monitoring tool for yeast growth in industrial brewing processes. *Chemosensors*, 5. doi: 10.3390/chemosensors5030024

03/2017 **Kopp, J.**, Slouka, C., Ulonska, S., Kager, J., Fricke, J., Spadiut, O., et al. (2017). Impact of Glycerol as Carbon Source onto Specific Sugar and Inducer Uptake Rates and Inclusion Body Productivity in *E. coli* BL21(DE3). *Bioengineering (Basel)* 5(1). doi: 10.3390/bioengineering5010001

## **Attended Conferences**

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03/2022 **Oral Presentation** at the 7th BioProScale Symposium 2022, Berlin: “Population heterogeneity in *E. coli* chemostat cultivation:

11/2021 **Oral Presentation** at the PEGS Europe 2021, Hybrid conference (Barcelona & virtual): “Cascaded Processing Enables Continuous Upstream Processing with *E. coli* BL21(DE3)”

03/2021 **Oral Presentation** at the 6<sup>th</sup> BioProScale Symposium 2021, virtual conference: “Continuous *E. coli* bioprocessing: Monitoring of subpopulations and how to deal with them”

07/2019 **Oral Presentation** at the BioProcess International Europe Conference & Exhibition, virtual Conference: “Monitoring Cell Populations and Tunable Promoters for Robust Continuous Upstream Processing”

08/2019        **Poster Presentation** at BASF International Summercourse 2019, in Ludwigshafen: “Population heterogeneities in long-term chemostat *E. coli* cultivations determined with online & at-line flow-cytometry analysis ”

06/2019        **Oral Presentation** at the WORLD BIOPHARM FORUM 2019: Driving Value Through Intensified Bioprocessing in Oxford: “Continuous bioprocessing with *E. coli*: chances and drawbacks”

04/2019        **Oral Presentation** at the BioProcess International European Summit 2019 in Vienna: “Control Strategies for Continuous Bioprocessing and along the Lifecycle”

04/2019        **Poster Presentation** at the 10<sup>th</sup> Recombinant Protein Production Conference in Crete: “Population heterogeneities in long-term chemostat *E. coli* cultivations determined with online & at-line flow-cytometry analysis ”

09/2018        **Oral Presentation** at the 12<sup>th</sup> Symposium of the European Society of Biochemical Engineering Sciences in Lisbon: “Impact of Glycerol as Carbon Source onto Inclusion Body Productivity in *E. coli* BL21(DE3)”

03/18    **Poster Presentation** at the 5<sup>th</sup> BioProScale Symposium 2018 in Berlin: “Impact of glycerol as carbon source onto specific sugar and inducer uptake rates and inclusion body productivity in *E. coli* BL21(DE3)”