

<b><i>List of publications</i></b>
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**Scientific Peer-Reviewed Papers**

- 1.** Spadiut O., Leitner C., Tan TC., Ludwig R., Divne C. and Haltrich D. "Mutations of Thr169 affect substrate specificity of pyranose 2-oxidase from *Trametes multicolor*" *Biocatal. Biotrans.* 2007, 26: 120-127. doi.org/10.1080/10242420701789320
- 2.** Abolmaali S., Mitterbauer R., Spadiut O., Peruci M., Weindorfer H., Lucyshyn D., Ellersdorfer G., Lemmens M., Moll WD. and Adam G. "Engineered baker's yeast as a sensitive bioassay indicator organism for the trichothecene toxin deoxynivalenol" *J. Microbiol. Methods* 2008, 72: 306-312. doi: 10.1016/j.mimet.2007.12.013
- 3.** Spadiut O., Pisanelli I., Maischberger T., Salaheddin C., Peterbauer C., Gorton L. and Haltrich D. "Engineering of pyranose 2-oxidase: improvement for biofuel cell and food applications through semi-rational protein design" *J. Biotechnol.* 2009, 5: 250-257. doi: 10.1016/j.jbiotec.2008.11.004
- 4.** Spadiut O., Leitner C., Salaheddin C., Varga B., Vertessy B., Tan TC., Divne C. and Haltrich D. "Improving thermostability and catalytic activity of pyranose 2-oxidase from *Trametes multicolor* by rational and semi-rational design" *FEBS J.* 2009, 276: 776-792. doi: 10.1111/j.1742-4658.2008.06823.x
- 5.** Spadiut O., Radakovits K., Pisanelli I., Salaheddin C., Yamabhai M., Tan TC., Divne C. and Haltrich D. "A thermostable triple mutant of pyranose 2-oxidase from *Trametes multicolor* with improved properties for biotechnological applications" *Biotechnol. J.* 2009, 4: 525-534. doi: 10.1002/biot.200800260
- 6.** Salaheddin C., Spadiut O., Ludwig R., Tan TC., Divne C., Haltrich D. and Peterbauer C. "Probing active-site residues of pyranose 2-oxidase from *Trametes multicolor* by semi-rational protein design" *Biotechnol. J.* 2009, 4: 535-543. doi: 10.1002/biot.200800265
- 7.** Pisanelli I., Kujawa M., Spadiut O., Kittl R., Halada P., Volc J., Mozuch MD., Kersten P., Haltrich D. and Peterbauer C. "Pyranose 2-oxidase from *Phanerochaete chrysosporium* – expression in *E. coli* and biochemical characterization" *J. Biotechnol.* 2009, 142: 97-106. doi: 10.1016/j.jbiotec.2009.03.019
- 8.** Pisanelli I., Kujawa M., Gschnitzer D., Spadiut O., Seiboth B. and Peterbauer CK. "Heterologous expression of an *Agaricus meleagris* pyranose dehydrogenase-encoding gene in *Aspergillus spp.* and characterization of the recombinant enzyme" *Appl. Microbiol. Biotechnol.* 2010, 86: 599-606. doi: 10.1007/s00253-009-2308-x
- 9.** Spadiut O., Brugger D., Coman V., Haltrich D. and Gorton L. "Engineered pyranose 2-oxidase: efficiently turning sugars into electrical energy" *Electroanalysis* 2010, 7-8: 813-820. doi.org/10.1002/elan.200980015
- 10.** Pitsawong W., Sucharitakul J., Prongjit M., Tan TC., Spadiut O., Haltrich D., Divne C. and Chaiyen P. "A conserved active-site threonine is important for both sugar and flavin oxidations of pyranose 2-oxidase" *J. Biol. Chem.* 2010, 285: 9697-9705. doi: 10.1074/jbc.M109.073247

11. **Spadiut O.**, Posch G., Ludwig R., Haltrich D. and Peterbauer CK. "Evaluation of different expression systems for the heterologous expression of pyranose 2-oxidase from *Trametes multicolor* in *E. coli*" *Microb. Cell Fact.* 2010, 9: 14. doi: 10.1186/1475-2859-9-14
12. **Spadiut O.**, Nguyen T. and Haltrich D. "Thermostable variants of pyranose 2-oxidase showing altered substrate selectivity for glucose and galactose" *J. Agric. Food Chem.* 2010, 58: 3465-3471. doi: 10.1021/jf9040047
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15. Tan TC., Pitsawong W., Wongnate T., **Spadiut O.**, Haltrich D., Chaiyen P. and Divne C. "H-bonding and positive charge at the N5/O4 locus are critical for covalent flavin attachment in trametes pyranose 2-oxidase" *J. Mol. Biol.* 2010, 402: 578-594. doi: 10.1016/j.jmb.2010.08.011
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17. Dietzsch C., **Spadiut O.** and Herwig C. "A dynamic method based on the specific substrate uptake rate to set up a feeding strategy for *Pichia pastoris*" *Microb. Cell Fact.* 2011, 10: 14. doi: 10.1186/1475-2859-10-14
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21. Pisanelli I., Wuehrer P., Reyes-Dominguez Y., **Spadiut O.**, Haltrich D. and Peterbauer C. "Heterologous expression and biochemical characterization of novel pyranose 2-oxidases from the ascomycetes *Aspergillus nidulans* and *Aspergillus oryzae*" *Appl. Microbiol. Biotechnol.* 2012, 93: 1157-1166. doi: 10.1007/s00253-011-3568-9
22. Bi R., **Spadiut O.**, Lawoko M., Brumer H. and Henriksson G. "Isolation and identification of microorganisms from soil able to live on lignin as carbon source and produce enzymes which cleave  $\beta$ -O-4 bond in a lignin model compound" *Cellulose Chem. Technol.* 2012, 46: 227-242.
23. Krainer FW., Dietzsch C., Hajek T., Herwig C, **Spadiut O.\*** and Glieder A. "Recombinant protein expression in *Pichia pastoris* strains with an engineered methanol utilization pathway" *Microb. Cell Fact.* 2012, 11: 22. doi: 10.1186/1475-2859-11-22

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30. Guerriero G., **Spadiut O.**, Kerschbamer C., Giorno F., Baric S. and Ezcurra I. "Analysis of cellulose synthase genes from domesticated apple identifies collinear genes *WDR53* and *CesA8A*: partial coexpression, bicistronic mRNA and alternative splicing of *CESA8A*" *J. Exp. Bot.* 2012, 63: 6045-6056. doi: 10.1093/jxb/ers255
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34. Frischmann A., Neudl S., Gaderer R., Bonazza K., Zach S., Gruber S., **Spadiut O.**, Friedbacher G., Grothe H. and Seidl-Seiboth V. "Self-assembly at air/water interfaces and carbohydrate-binding properties of the small secreted protein EPL1 from the fungus *Trichoderma atroviride*" *J. Biol. Chem.* 2013, 288: 4278-4287. doi: 10.1074/jbc.M112.427633
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39. Hassan N., Tan T.C., **Spadiut O.**, Pisanelli I., Fusco L., Haltrich D., Peterbauer C. and Divne C. "Crystal structures of *Phanerochaete chrysosporium* pyranose 2-oxidase suggest that the N-terminus acts as a propeptide that assists in homotetramer assembly" *FEBS Open Bio*, 2013, 3: 496-504. doi: 10.1016/j.fob.2013.10.010
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- 63.** Wurm D.J., Veiter L., Ulonska S., Eggenreich B., Herwig C. and **Spadiut O.\*** "The *E. coli* pET expression system revisited – mechanistic correlation between glucose and lactose uptake" *Appl. Microbiol. Biotechnol.*, 2016, 100: 8721-8729. doi: 10.1007/s00253-016-7620-7  
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- 136.** Kittler S., Slouka C., Pell A., Lamplot R., Besleaga M., Ablasser S., Herwig C., **Spadiut O.** and Kopp J. “Cascaded processing enables continuous upstream processing with *E. coli* BL21(DE3)” *Sci. Rep.*, 2021, 11 : 11477. doi: 10.1038/s41598-021-90899-9.
- 137.** Doppler P., Kriechbaum R. and **Spadiut O.\*** “Make microalgae cultures axenic again – a fast and simple workflow utilizing fluorescence-activated cell sorting” *J. Microbiol. Methods*, 2021, 186: 106256. doi: 10.1016/j.mimet.2021.106256.  
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- 138.** Kittler S., Besleaga M., Ebner J., and **Spadiut O.\*** “Protein L – more than just an affinity ligand” *Processes*, 2021, 9 : 874. doi : 10.3390/pr9050874  
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- 139.** Ebner J., Humer D., Klausser R., Rubus V., Pell R., **Spadiut O.** and Kopp J. “At-line reversed phase liquid chromatography for in-process monitoring of inclusion body solubilization” *Bioengineering*, 2021, 8 : 78. doi : 10.3390/bioengineering8060078
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- 142.** Humer D., Furlanetto V., Schruof A.K., Wlodarczyk A., Kuttke M., Divne C. and **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  
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- 145.** Pekarsky A., Michor H. and **Spadiut O.\*** “Revisiting the potential functionality of the MagR protein” *Magnetochemistry*, 2021, 7:147. doi: 10.3390/magnetochemistry7110147  
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## Patents

1. Reinsch H., Heidingsfelder J., **Spadiut O.** and Herwig C. „Verfahren zur Ermittlung von Gefrierschäden von wässrigen Produktlösungen beim Einfrierprozess“; Patent No. 2013090414255500 DE
2. Quehenberger J., Wurm D. and **Spadiut O.** „Method for producing a composition comprising archaeal lipids from a *Sulfolobus* cell culture“; Patent No. WO2020/187526 A1
3. Humer D. and **Spadiut O.** "HRP Mutant"; Patent No. EP 20167727.5
4. Humer D., Ebner J. and **Spadiut O.** "HRP Inclusion Body Process"; Patent No. EP 20167716.8

## Invited Talks

1. Spadiut O. (2008) “Genetic engineering of the carbohydrate oxidase pyranose 2-oxidase from *Trametes multicolor*“, 12<sup>th</sup> Austrian Carbohydrate Workshop, Feb 21 2008, University of Natural Resources and Applied Life Sciences BOKU, Vienna, Austria
2. Spadiut O. (2009) “Pyranose 2-oxidase: playground for enzyme evolution“, 1<sup>st</sup> annual meeting of the Austrian Association of Molecular Life Sciences and Biotechnology ÖGMBT, Sept 21 2009, Innsbruck, Austria
3. Spadiut O. (2011) “Building custom polysaccharides *in vitro* with a new glycosynthase and a glycosyltransferase“, Gordon Research Conference GRC on Cellulosomes, Cellulases & Other Carbohydrate Modifying Enzymes, July 24-29 2011, Stonehill College, Easton, MA, USA

4. Spadiut O. (2011) "A comparative summary of expression systems for the heterologous expression of galactose oxidase", PEGS Europe - Protein & Antibody Engineering Summit, Oct 11-13 2011, Hannover, Germany
5. Spadiut O. (2012) "Playing with the methanol utilization pathway in *Pichia pastoris*", Pichia 2012, Feb 29 - March 03 2012, Alpbach, Austria
6. Spadiut O. (2012) "Efficient purification of a recombinant plant peroxidase by a mixed-mode resin", ISPPP 2012, Sept 26-29 2012, Istanbul, Turkey
7. Spadiut O. (2013) "Stability studies with the multifunctional enzyme horseradish peroxidase", IIR Cryoworkshop 2013, Sept 04-05 2013, Dresden, Germany
8. Spadiut O. (2014) "Knockout of an endogenous mannosyltransferase increases the homogeneity of glycoproteins produced in *Pichia pastoris*", Pichia 2014, March 02-05 2014, San Diego, USA
9. Spadiut O. (2014) "Purification and biochemical characterization of 19 recombinant plant peroxidase isoenzymes produced in *Pichia pastoris*", Monolith Summer School 2014, May 30-June 4 2014, Portoroz, Slovenia
10. Spadiut O. (2014) "Efficient DSP for hyperglycosylated proteins from yeast", Bioproduction, Oct 08-09 2014, Barcelona, Spain
11. Spadiut O. (2015) "Horseradish Peroxidase – from Genome to Protein", 12<sup>th</sup> International Life Science Meeting, April 15-17 2015, Krems, Austria
12. Spadiut O. (2015) "Development of a novel feeding strategy for an industrial yeast strain", 5<sup>th</sup> Annual Bioproduction: Scale, Bioreactors and Disposables, Aug 5-6 2015, Boston, USA
13. Spadiut O. (2015) "Monoliths as PAT tools for bioprocess improvement", CHI's 7<sup>th</sup> Annual PEGS Europe, Nov 5-6, Lisbon, Portugal
14. Spadiut O. (2016) "Horseradish Peroxidase – from genome to protein", XI Meeting of young Chemical Engineers, Feb 18-19 2016, Zagreb, Croatia
15. Spadiut O. (2016) "Development of a fed-batch process for a recombinant *Pichia pastoris*  $\Delta$  och1 strain expressing a plant peroxidase", Pichia 2016, April 3-6 2016, Antalya, Turkey
16. Spadiut O. (2016) "A novel PAT toolbox to facilitate monitoring of *E. coli* bioprocesses", Monolith Summer School 2016, May 27-June 1 2016, Portoroz, Slovenia
17. Spadiut O. (2016) "Identification of interaction effects between unit operations", Workshop on Methods for Accelerating Scalable Bioprocess Development, Nov 09-11 2016, Vienna, Austria
18. Spadiut O. (2016) "Continuous Bioprocessing - status quo and challenges", European Antibody Congress, Nov 14-16 2016, Basel, Switzerland
19. Spadiut O. (2016) "A novel tandem Fab against coeliac disease", European Antibody Congress, Nov 14-16 2016, Basel, Switzerland
20. Spadiut O. (2017) "Freezing effects on monoclonal antibodies in ZETA's scale down systems", ZETA Symposium 2017, January 25-26 2017, Lieboch, Austria

21. Spadiut O. (2017) "Can a novel monitoring tool based on chromatogram fingerprinting help in enabling continuous bioprocessing?", 10th annual BioInnovation Leaders Summit GBX Summits, February 7-9 2017, Berlin, Germany
22. Spadiut O. (2017) "A novel toolbox for monitoring inclusion body processing", Cell Culture and Downstream World Congress 2017, February 21-23 2017, Munich, Germany
23. Spadiut O. (2017) "How to tune recombinant protein production in *E. coli* for enhanced production of biopharmaceuticals", Biotechnology and Biotech Industries Meet, March 20-22 2017, Rome, Italy
24. Spadiut O. (2017) "How Induction Impacts Inclusion Body Properties and Inclusion Body Processing in *E. coli*", 14th International Life Science Meeting, April 5-7 2017, Krems, Austria
25. Spadiut O. (2017) „Glycoengineering of Biopharmaceuticals by using Glycoengineered Yeasts“, CBM12, April 22-26 2017, Vienna, Austria
26. Spadiut O. (2017) „How Induction Impacts Inclusion Body Properties and Inclusion Body Processing in *E. coli*“, PEGS – Protein Expression Strategies, May 2-5 2017, Boston, USA
27. Spadiut O. (2017) "A novel monitoring tool based on chromatogram fingerprinting as potential enabler of continuous bioprocessing", Biotech 2017, September 7-8 2017, Wädenswil, Switzerland
28. Spadiut O. (2017) "The production of a novel scFv against coeliac disease – from gene to final product", European Antibody Congress, Oct 31-Nov 2 2017, Basel, Switzerland
29. Spadiut O. (2018) "Continuous Bioprocessing – how can it be done?", ZETA Symposium 2018, March 6-8, 2018, Seggau, Austria
30. Spadiut O. (2018) "A novel Fab against celiac disease – from IB to product formulation", Bioprocessing Summit, March 20-23, 2018, Lisbon, Portugal
31. Spadiut O. (2018) "Inclusion Bodies – more than just waste!", 22<sup>nd</sup> edition of International Conference on Biotechnology, April 16-17, Amsterdam, Netherlands
32. Spadiut O. (2018) "Chromatogram fingerprinting to follow integrated bioprocesses", World Advanced Therapies and Regenerative Medicine, May 16-18th, London; UK
33. Spadiut O. (2018) „Production of Fabs in *E. coli* – a comparison of expression systems“, BioProduction 2018, October 9-10th, Dublin, Ireland
34. Spadiut O. (2019) „The time has come – more control in IB processing“, Bioprocessing Summit, March 19-21, 2018, Lisbon, Portugal
35. Spadiut O. (2019) „The time has come to bring QbD to inclusion body processing“, Bioprocess International Europe, April 2-5, 2019, Vienna, Austria
36. Spadiut O. (2019) „A tricky endeavour : production of membrane-bound P450s“, PEGS Europe 2019, Protein Purification Technologies, November 21-22, 2019, Lisbon, Portugal
37. Spadiut O. (2020) „Inclusion Body Processing: A REAL Black Box Case Study“, PEGS Europe Virtual Event 2020, Protein Purification Technologies, November 9-12, 2020, virtual

- 38.** Spadiut O. (2021) „Extracellular protein production with *E. coli* – how can it be done and what does it really bring for the DSP?“, BioProcessing Summit Europe Virtual, March 16-17, 2021, virtual
- 39.** Spadiut O. (2021) „NovoArc – Health without needles“, Biovaria, April 26-28, 2021, virtual
- 40.** Spadiut O. (2021) „Scalable and efficient recombinant production of the versatile plant enzyme horseradish peroxidase“, BioTalk, September 21-22, 2021, virtual
- 41.** Spadiut O. (2021) „ Extracellular protein production with *E. coli* – how can it be done and what does it really bring for the DSP?“, PEGS Europe Protein and Antibody Engineering Summit, November 2-4, 2021, Barcelona, Spain