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A. Peer-reviewed publications

A.1 Original publications

39. Milke L., Ferreira P., Kallscheuer N., Braga, A., Vogt M., Kappelmann J., Oliveira J., Silva A. R., Rocha I., Bott M., Noack S., Faria N., **Marienhagen J.*** (2019). Modulation of the central carbon metabolism of *Corynebacterium glutamicum* improves malonyl-CoA availability and increases plant polyphenol synthesis. *Biotechnol. Bioeng.* (epub ahead of print) (<http://dx.doi.org/10.1002/bit.26939>)
38. Aschenbrenner J., Marx P., Pietruszka J., **Marienhagen J.*** (2019). Microbial production of natural and non-natural monolignols with *Escherichia coli*. *ChemBioChem* (epub ahead of print) (<http://dx.doi.org/10.1002/cbic.201800673>)
37. Kallscheuer N., Menezes R., Foito A., Silva M., Braga A., Dekker W. Méndez Sevillano D., Rosado-Ramos R., Jardim C., Oliveira J., Ferreira P., Rocha I. Silva A.R., Sousa M. Allwood J.W., Bott M., Faria N., Stewart D., Ottens M., Naesby M., Nunes dos Santos C.*, **Marienhagen J.*** (2019). Identification and microbial production of the raspberry phenol salidroside that is active against Huntington's disease. *Plant Phys.* (epub ahead of print) (<https://doi.org/10.1104/pp.18.01074>)
36. Tenhaef N., Brüsseler C., Radek A., Hilmes R., Unrean P., **Marienhagen J.**, Noack S. (2018). Production of D-xylonic acid using a non-recombinant *Corynebacterium glutamicum* strain. *Bioresour. Technol.* 268: 332-339. (<https://doi.org/10.1016/j.biortech.2018.07.127>)
35. Kallscheuer N. and **J. Marienhagen*** (2018). *Corynebacterium glutamicum* as platform for the production of hydroxybenzoic acids. *Microb. Cell Fact.* 17: 70. (<http://doi.org/10.1186/s12934-018-0923-x>)
34. Braga A., Oliveira J., Silva R., Ferreira P., Rocha I., Kallscheuer N., **Marienhagen J.**, Faria N. (2018). Impact of the cultivation strategy on resveratrol production from glucose in engineered *Corynebacterium glutamicum*. *J. Biotechnol.* 265: 70-75. (<http://doi.org/10.1016/j.jbiotec.2017.11.006>)

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33. Brüsseler C., Radek A., Tenhaef N., Krumbach K., Noack S., **Marienhagen J.*** (2018). The myo-inositol/proton symporter IolT1 contributes to D-xylose uptake in *Corynebacterium glutamicum*. *Bioresour. Technol.* 249: 953-961. (<http://dx.doi.org/10.1016/j.biortech.2017.10.098>)
32. Hartmann A., Santa A.V., Kallscheuer N., Vogt M., Julien-Laferrière A., Sagot M.-F., **Marienhagen J.**, Vinga S. (2017). OptPipe - a pipeline for optimizing metabolic engineering targets. *BMC Syst. Biol.* 11: 143. (<http://doi.org/10.1186/s12918-017-0515-0>)
31. Siedler S., Khatri N.K., Zsohár A., Kjærboelling I., Vogt M., Hammar P., Nielsen C.F., **Marienhagen J.**, Sommer M.O.A., Joensson H.N. (2017). Development of a bacterial biosensor for rapid screening of yeast *p*-coumaric acid production. *ACS Syn. Biol.* 6 (10): 1860-1869. (<http://dx.doi.org/10.1021/acssynbio.7b00009>)
30. Radek A., Tenhaef N., Müller M.F., Brüsseler C., Wiechert W., **Marienhagen J.**, Polen T., Noack S. (2017). Miniaturized and automated adaptive laboratory evolution: Evolving *Corynebacterium glutamicum* towards an improved D-xylose utilization. *Bioresour. Technol.* 245: 1377-1385. (<http://dx.doi.org/10.1016/j.biortech.2017.05.055>)
29. Kallscheuer N., Vogt M., Bott M., **Marienhagen J.*** (2017). Functional expression of plant-derived O-methyltransferase, flavanone 3-hydroxylase, and flavonol synthase in *Corynebacterium glutamicum* for production of pterostilbene, kaempferol, and quercetin. *J. Biotechnol.* 258: 190-196. (<http://dx.doi.org/10.1016/j.jbiotec.2017.01.006>)
28. Kallscheuer N., Vogt M., **Marienhagen J.*** (2017). A novel synthetic pathway enables microbial production of polyphenols independent from the endogenous aromatic amino acid metabolism. *ACS Syn. Biol.* 6 (3): 410-415. (<http://dx.doi.org/10.1021/acssynbio.6b00291>)
27. Hochheim J., Kranz A., Krumbach K., Sokolowsky S., Eggeling L.*, Noack S., Bocola M., Bott M., **Marienhagen J.*** (2017). Mutations in MurE, the essential UDP-N-acetylmuramoyl-alanyl-D-glutamate 2,6-diaminopimelate ligase of *Corynebacterium glutamicum*: Effect on L-lysine formation and analysis of systemic consequences. *Biotechnol. Lett.* 39: 283-288. (<http://dx.doi.org/10.1007/s10529-016-2243-8>)
26. Vogt M., Brüsseler C., van Ooyen J., Bott M., **Marienhagen J.*** (2016). Production of 2-methyl-1-butanol and 3-methyl-1-butanol in engineered *Corynebacterium glutamicum*. *Metab. Eng.* 38: 436-445. (<http://dx.doi.org/10.1016/j.ymben.2016.10.007>)

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25. Kallscheuer N., Vogt M., Stenzel A., Gätgens J., Bott M., **Marienhagen J.*** (2016). Construction of a *Corynebacterium glutamicum* platform strain for the production of stilbenes and (2S)-flavanones. *Metab. Eng.* 38: 47-55. (<http://dx.doi.org/10.1016/j.ymben.2016.06.003>)
24. Radek A., Müller M.F., Gätgens J., Eggeling L., Krumbach K., **Marienhagen J.**, Noack S. (2016). Formation of xylitol and xylitol-5-phosphate and its impact on growth of D-xylose-utilizing *Corynebacterium glutamicum* strains. *J. Biotechnol.* 231: 160-166. (<http://dx.doi.org/10.1016/j.jbiotec.2016.06.009>)
23. Kallscheuer N., Vogt M., Kappelmann J., Krumbach K., Noack S., Bott M. and **Marienhagen J.*** (2016). Identification of the *phd* gene cluster responsible for phenylpropanoid utilization in *Corynebacterium glutamicum*. *Appl. Microbiol. Biotechnol.* 100: 1871-1881. (<http://dx.doi.org/10.1007/s00253-015-7165-1>)
22. van Summeren-Wesenhagen P.V., Voges R., Dennig A., Sokolowsky S., Noack S., Schwaneberg U., **Marienhagen J.*** (2015). Combinatorial optimization of synthetic operons for the microbial production of p-coumaryl alcohol with *Escherichia coli*. *Microb. Cell Fact.* 14: 79. (<http://dx.doi.org/10.1186/s12934-015-0274-9>)
21. Witthoff S., Schmitz K., Niedenführ S., Nöh K., Noack S., Bott M., **Marienhagen J.*** (2015). Metabolic engineering of *Corynebacterium glutamicum* for the metabolization of methanol. *Appl. Environ. Microbiol.* 81 (6): 2215-2225. (<http://dx.doi.org/10.1128/AEM.03110-14>)
20. van Summeren-Wesenhagen P.V. and **J. Marienhagen*** (2015). Metabolic engineering of *Escherichia coli* for the synthesis of the plant polyphenol pinosylvin. *Appl. Environ. Microbiol.* 81 (3): 840-849. (<http://dx.doi.org/10.1128/AEM.02966-14>)
19. Radek A., Krumbach K., Gätgens J., Wendisch V. F., Wiechert W., Bott M., Noack S.*, **Marienhagen J.*** (2014). Engineering of *Corynebacterium glutamicum* for minimized carbon loss during utilization of D-xylose containing substrates. *J. Biotechnol.* 192: 156-160. (<http://dx.doi.org/10.1016/j.jbiotec.2014.09.026>)
18. Rybniker J., Pojer F., **Marienhagen J.**, Kolly G.S., Chen J.M., van Gumpel E., Hartmann P., Cole S.T. (2014). The cysteine desulfurase IscS of *Mycobacterium tuberculosis* is involved in iron-sulfur cluster biogenesis and oxidative stress defense. *Biochem. J.* 459(3): 467-478. (<http://dx.doi.org/10.1042/BJ20130732>)

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17. Grover S., Alderwick L.J., Mishra A.K., Krumbach K., **Marienhagen J.**, Eggeling L., Bhatt A., Besra G.S. (2014). Benzothiazinones mediate killing of *Corynebacterineae* by blocking decaprenyl phosphate recycling involved in cell wall biosynthesis. *J. Biol. Chem.* 289(9): 6177-6187. (<http://dx.doi.org/10.1074/jbc.M113.522623>)
16. Witthoff S., Mühlroth A., **Marienhagen J.***, Bott M.* (2013) C1 metabolism in *Corynebacterium glutamicum*: an endogenous pathway for oxidation of methanol to carbon dioxide. *Appl. Environ. Microbiol.* 79(22): 6974–6983. (<http://dx.doi.org/10.1128/AEM.02705-13>)
15. Neufeld K., **Marienhagen J.**, Schwaneberg U., Pietruszka J. (2013). Benzylic hydroxylation of aromatic compounds by P450 BM3. *Green Chem.* 15: 2408-2421. (<http://dx.doi.org/10.1039/C3GC40838H>)
14. Binder S., Siedler S., **Marienhagen J.**, Bott M., Eggeling L. (2013). Recombineering in *Corynebacterium glutamicum* combined with optical nanosensors: a general strategy for fast producer strain generation. *Nucleic Acids Res.* 41(12): 6360-6369. (<http://dx.doi.org/10.1093/nar/gkt312>)
13. Staudt S., Burda E., Giese C., Müller C.A., **Marienhagen J.**, Schwaneberg U., Hummel W., Drauz K., Gröger H. (2013). Direct oxidation of cycloalkanes to cycloalkanones with oxygen in water. *Angew. Chem. Int. Ed. Engl.* 5(8): 2359-2363. (<http://dx.doi.org/10.1002/anie.201204464>)
12. Ruff A.J., **Marienhagen J.**, Verma R., Roccatano D., Genieser H-G., Niemann P., Shivange A.V., Schwaneberg U. (2012). dRTP and dPTP a complementary nucleotide couple for the Sequence Saturation Mutagenesis (SeSaM) method. *J. Mol. Catal. B Enzym.* 84: 40-47. (<http://dx.doi.org/10.1016/j.molcatb.2012.04.018>)
11. Braun A., Halwachs B., Geier M., Weinhandl K., Guggemos M., **Marienhagen J.**, Ruff A.J., Schwaneberg U., Rabin V., Torres-Pazmino D.E., Thallinger G.G., Glieder A. (2012). MuteinDB: the mutein database linking substrates, products and enzymatic reactions directly with genetic variants of enzymes. *Database* 2012. (<http://dx.doi.org/10.1093/database/bas028>)
10. **Marienhagen J.**, Dennig A., Schwaneberg U. (2012). Phosphorothioate-based DNA recombination: an enzyme-free method for the combinatorial assembly of multiple DNA fragments. *BioTechniques Rapid Dispatches* 0: 1-6. (<http://dx.doi.org/10.2144/000113865>)

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9. Dennig A., **Marienhagen J.**, Ruff A.J., Guddat L., Schwaneberg U. (2012). Directed Evolution of P450 BM 3 into a p-xylene hydroxylase. *ChemCatChem* 4: 771-773. (<http://dx.doi.org/10.1002/cctc.201200092>)
8. Staudt S., Müller C. M., **Marienhagen J.**, Böing C., Buchholz S., Schwaneberg U., Gröger H. (2012). Biocatalytic hydroxylation of n-butane with *in situ* cofactor regeneration at low temperature and under normal pressure. *Beilstein J. Org. Chem.* 8: 186-191. (<http://dx.doi.org/10.3762/bjoc.8.20>)
7. Dennig A., Shivange A. V., **Marienhagen J.**, Schwaneberg U. (2011). OmniChange: The Sequence Independent Method for Simultaneous Site-Saturation of Five Codons. *PLoS ONE* 6(10): e26222. (<http://dx.doi.org/10.1371/journal.pone.0026222>)
6. Mundhada H., **Marienhagen J.**, Scacioc A., Schenk A., Roccatano D., Schwaneberg U. (2011). SeSaM-Tv-II Generates a Protein Sequence Space that is Unobtainable by epPCR. *ChemBioChem* 12(10): 1595-1601. (<http://dx.doi.org/10.1002/cbic.201100010>)
5. Blanus M., Schenk A., Sadeghi H., **Marienhagen J.**, Schwaneberg U. (2010). Phosphorothioate-based ligase-independent gene cloning (PLICing): An enzyme-free and sequence-independent cloning method *Anal. Biochem.* 406(2): 141-146. (<http://dx.doi.org/10.1016/j.ab.2010.07.011>)
4. Lucas D., Goulitquer S., **Marienhagen J.**, Fer M., Dreano Y., Schwaneberg U., Amet Y., Corcos L. (2010). Stereoselective epoxidation of the last double bond of polyunsaturated long-chain fatty acids by human cytochromes P450. *J. Lipid Res.* 51(5): 1125-1133. (<http://dx.doi.org/10.1194/jlr.M003061>)
3. **Marienhagen J.** and L. Eggeling (2008). Metabolic function of *Corynebacterium glutamicum* aminotransferases AlaT and AvtA and impact on L-valine production. *Appl. Environ. Microbiol.* 74(24): 7457-7462. (<http://dx.doi.org/10.1128/AEM.01025-08>)
2. **Marienhagen J.**, Sandalova T., Sahn H., Eggeling L., Schneider G. (2008). Insights into the structural basis of substrate recognition by histidinol-phosphate aminotransferase from *Corynebacterium glutamicum*. *Acta Crystallogr. D Biol. Crystallogr.* 64: 675-685. (<http://dx.doi.org/10.1107/S0907444908009438>)
1. **Marienhagen J.**, Kennerknecht N., Sahn H., Eggeling L. (2005). Functional analysis of all aminotransferase proteins inferred from the genome sequence of *Corynebacterium glutamicum*. *J. Bacteriol.* 187(22): 7639-7646. (<http://dx.doi.org/10.1128/JB.187.22.7639-7646.2005>)

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A.2 Review articles

9. Kallscheuer N., Classen T., Drepper T., **Marienhagen J.*** (2019). Production of plant metabolites with applications in the food industry using engineered microorganisms. *Curr. Opin. Biotechnol.* 56: 7–17. (<https://doi.org/10.1016/j.copbio.2018.07.008>)
8. Milke L., Aschenbrenner J., **Marienhagen J.**, Kallscheuer N. (2018). Production of plant-derived polyphenols in microorganisms: current state and perspectives. *Appl. Environ. Microbiol.* 102: 1575-1585. (<https://doi.org/10.1007/s00253-018-8747-5>)
7. Dudnik A., Filipa Almeida A., Andrade R., Avila B., [...] **Marienhagen J.** [...] *et al.* (2018). BACHBerry: BACterial Hosts for production of Bioactive phenolics from bERRY fruits. *Phytochem. Rev.* 17 (2): 291-326. (<http://dx.doi.org/10.1007/s11101-017-9532-2>)
6. Kallscheuer N., Polen T., Bott M., **Marienhagen J.*** (2017). Reversal of β -oxidative pathways for the microbial production of chemicals and polymer building blocks. *Metab. Eng.* 42: 33-42. (<http://doi.org/10.1016/j.ymben.2017.05.004>)
5. Eggeling L., Bott M., **Marienhagen J.** (2015). Novel screening methods - biosensors. *Curr. Opin. Biotechnol.* 35: 30-36. (<http://dx.doi.org/10.1016/j.copbio.2014.12.021>)
4. Schallmeyer M., Frunzke J., Eggeling L., **Marienhagen J.*** (2014). Looking for the pick of the bunch: High-throughput screening of producing microorganisms with biosensors. *Curr. Opin. Biotechnol.* 26: 148-154. (<http://dx.doi.org/10.1016/j.copbio.2014.01.005>)
3. van Summeren-Wesenhagen P.V. and **J. Marienhagen*** (2013). Putting bugs to the blush: metabolic engineering for phenylpropanoid-derived products in microorganisms. *Bioengineered* 4(6): 267-274. (<http://dx.doi.org/10.4161/bioe.23885>)
2. **Marienhagen J.*** and M. Bott (2013). Metabolic engineering of microorganisms for the synthesis of plant natural products. *J. Biotechnol.* 163(2): 166-178. (<http://dx.doi.org/10.1016/j.jbiotec.2012.06.001>)

For three years in a row this review article was among the "Top25 Hottest Articles" of the Journal of Biotechnology (counted by article downloads on ScienceDirect) (2012: #16/25; 2013: #3/25; 2014: #16/25)
1. Shivange A., **Marienhagen J.**, Mundhada H., Schenk A., Schwaneberg U. (2009). Advances in generating functional diversity for directed protein evolution. *Curr. Opin. Chem. Biol.* 13(1): 1-7. (<http://dx.doi.org/10.1016/j.cbpa.2009.01.019>)

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B. Book chapters

2. Kircher M. Bott M., **Marienhagen J.** (2017) Die Bedeutung der Biotechnologie für die Bioökonomie. In: *Bioökonomie für Einsteiger*, J. Pietzsch (Hrsg.) Springer-Verlag GmbH Deutschland, Berlin Heidelberg. (ISBN 978-3-662-53762-6 (Hardcover) / ISBN 978-3-662-53763-3 (eBook))
1. Dennig A., **Marienhagen J.**, Ruff A. J., Schwaneberg U. (2014) OmniChange: Simultaneous Site-Saturation of up to Five Codons. In: *Directed Evolution Library Creation 2nd Edition*, Gillam E. M. J., Copp, J. N., Ackerley, D. F. Series: *Methods in Molecular Biology*, Vol. 1179: 139 – 149. Springer Science+Business Media, Luxemburg. Berlin. (ISBN 978-1-4939-1052-6 (Hardcover) / ISBN 978-1-4939-1053-3 (eBook))

C. Other publications

4. Kallscheuer N. und **Marienhagen J.** (2017). Produktion pflanzlicher Polyphenole mit *Corynebacterium glutamicum*. *BIOSpektrum* 23 (3): 334-336. (<https://doi.org/10.1007/s12268-017-0804-6>)
3. Schendzielorz G., Binder S. und **Marienhagen J.** (2014). Biosensoren für die mikrobielle Stammentwicklung im Hochdurchsatzformat. *BIOSpektrum* 20 (2): 228-230. (<https://doi.org/10.1007/s12268-014-0429-y>)
2. **Marienhagen J.**, Schwaneberg U. und Helm M. (2009). Gelenkte Enzymevolution, rationales Enzymdesign und Einzelmolekültechniken zur RNA-Untersuchung. *Trendbericht Biochemie und Molekularbiologie 2008, Nachrichten aus der Chemie* 57 (3): 278-287. (<http://dx.doi.org/10.1002/nadc.200960719>)
1. **Marienhagen J.:** Struktur und Funktion von Transaminasen aus *Corynebacterium glutamicum*. Schriften des Forschungszentrums Jülich, Reihe Gesundheit, Band 4, Jülich (2007) (ISBN 978-3-89336-512-8)

D. Patents/Patent applications

8. Kallscheuer N., Milke L., Bott M., **Marienhagen J.** (2018). Bereitstellung von Malonyl-CoA in coryneformen Bakterien sowie Verfahren zur Herstellung von Polyphenolen und dPolyketiden mit coryneformen Bakterien. DE102018008670.5

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7. Tenhaef N., Brüsseler C., **Marienhagen J.**, Noack S. (2018). Verfahren zur verbesserten fermentativen Herstellung von D-Xylonat unter Verwendung coryneformer Bakterien.
PT 1.2820
6. Radek A., Krumbach K., **Marienhagen J.**, Noack S. (2016). Producing D-xylonate from D-xylose using microorganisms comprises obtaining D-xylose from a coryneform bacterium, in which activity of lolR gene is reduced or completely eliminated with respect to wild form or a wild-type mutant.
DE102016007810-A1; WO2017220059-A1; PCT/DE2017/000138
5. Schürmann M., Bonrath W., Dennig A., **Marienhagen J.**, Schwaneberg U., Ruff A.J. (2013). New modified P450 monooxygenase, useful for stereoselective aromatic hydroxylation of benzene derivatives, preferably p-xylene or pseudocumene for the production of vitamin E.
WO2013160365 A1; PCT/EP2013/058525
4. Haefner S., Schwaneberg U., **Marienhagen J.**, Dennig A., Shivange A.V. (2010). Methods and Materials for Nucleic Acid Manipulation.
WO2012152691 A1; US20120295311 A1; EP11 165 367.1; PCT/EP2012/058250; US 13/466,656
3. Burda, E., Drauz K., Gröger H., **Marienhagen J.**, Schwaneberg U., (2009). Method for the enzymatic reaction of alkanes
DE102008054918-A1; WO/2010/070086; PCT/EP2009/067493
2. **Marienhagen J.**, Eggeling L., Sahm H. (2006). Method for the fermentative production of L-valine using *Corynebacterium glutamicum* having increased Transaminase C activity. DE102004046933-A1; WO2006034667-A2; EP1812553-A2
1. **Marienhagen J.**, Eggeling L., Sahm H. (2006). Method for the fermentative production of L-valine using *Corynebacterium glutamicum* lacking Alanin-Transaminase activity. DE102005019967-A1; WO2006116962-A2; EP1874946-A2

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