

# Publications

Facchinatto WM, Mouren A, Welsing G, Willing K, Regestein L, Tiso T, Blank LM, Avérous L (2025) Chem-biotech strategy to synthesize sustainable urethane-based polymers and additives from microbially produced hydroxyalkanoxy-alkanoates and polyol lipids. *Eur Polym J* 222, 113621.

Lenić A, Bardl B, Kloss F, Peschel G, Schlembach I, Lackner G, Regestein L, Rosenbaum MA (2025) Pilot scale production of a F420 precursor under microaerobic conditions. *Biotechnol J* 20(3), e70002.

Janevska S<sup>#</sup>, Weiser S<sup>\*</sup>, Huang Y, Lin J, Hoefgen S, Jojić K, Barber AE, Schäfer T, Fricke J, Hoffmeister D, Regestein L, Valiante V, Kufs JE<sup>#</sup> (2024) Optimized psilocybin production in tryptophan catabolism-repressed fungi. *Microb Biotechnol* 17(11), e70039.

Schlembach I, Bardl B, Regestein L, Rosenbaum MA (2024) Nonengineered fungus provides a shortcut from cellulose to bulk *Erythro*-isocitric acid. *ACS Sustainable Chem Eng* 12(9), 3408-3418.

Tiso T, Demling P, Karmainski T, Oraby A, Eiken J, Liu L, Bongartz P, Wessling M, Desmond P, Schmitz S, Weiser S, Emde F, Czech H, Merz J, Zibek S, Blank LM, Regestein L (2024) Foam control in biotechnological processes—challenges and opportunities. *Discov Chem Eng* 4(2), (Review)

Götze S, Vij R, Burow K, Thome N, Urbat L, Schlosser N, Pflanze S, Müller R, Hänsch VG, Schlabach K, Fazlikhani L, Walther G, Dahse HM, Regestein L, Brunke S, Hube B, Hertweck C, Franken P, Stallforth P (2023) Ecological niche-inspired genome mining leads to the discovery of crop-protecting nonribosomal lipopeptides featuring a transient amino acid building block. *J Am Chem Soc* 145(4), 2342-2353.

Peng CC, Dormanns N, Regestein L, Beemelmans C (2023) Isolation of sulfonosphingolipids from the rosette-inducing bacterium *Zobellia uliginosa* and evaluation of their rosette-inducing activity. *RSC Adv* 13(39), 27520-27524.

Pflanze S, Mukherji R, Ibrahim A, Günther M, Götze S, Chowdhury S, Reimer L, Regestein L, Stallforth P (2023) Nonribosomal peptides protect *Pseudomonas nunensis* 4A2e from amoebal and nematodal predation. *Chem Sci* 14(41), 11573-11581.

Günther M<sup>\*</sup>, Reimer C<sup>\*</sup>, Herbst R<sup>\*</sup>, Kufs JE, Rautschek J, Ueberschaar N, Zhang S, Peschel G, Reimer L, Regestein L, Valiante V, Hillmann F<sup>#</sup>, Stallforth P<sup>#</sup> (2022) Yellow polyketide pigment suppresses premature hatching in social amoeba. *Proc Natl Acad Sci U S A* 119(43), e2116122119.

Kufs JE, Reimer C, Stallforth P, Hillmann F, Regestein L<sup>\*</sup> (2022) The potential of amoeba-based processes for natural product syntheses. *Curr Opin Biotechnol* 77, 102766. (Review)

Kufs JE, Reimer C, Steyer E, Valiante V, Hillmann F, Regestein L (2022) Scale-up of an amoeba-based process for the production of the cannabinoid precursor olivetolic acid. *Microb Cell Fact* 21(1), 217.

Reimer C<sup>\*</sup>, Kufs JE<sup>\*</sup>, Rautschek J, Regestein L, Valiante V<sup>#</sup>, Hillmann F<sup>#</sup> (2022) Engineering the

amoeba *Dictyostelium discoideum* for biosynthesis of a cannabinoid precursor and other polyketides. *Nat Biotechnol* 40(5), 751-758.

Stein J, Schlosser N, Bardl B, Peschel G, Meyer F, Kloss F, Rosenbaum MA, Regestein L (2022) Scalable downstream method for the cyclic lipopeptide jagaricin. *Eng Life Sci* 22(12), 811-817.

Weiser S, Tiso T, Willing K, Bardl B, Eichhorn L, Blank LM, Regestein L (2022) Foam-free production of the rhamnolipid precursor 3-(3-hydroxyalkanoyloxy) alkanolic acid (HAA) by *Pseudomonas putida*. *Disc Chem Engin* 2(8),

Leichnitz D, Peng CC, Raguž L, Rutaganira FUN, Jautzus T, Regestein L, King N, Beemelmans C (2021) Structural and functional analysis of bacterial sulfonosphingolipids and rosette-inducing factor 2 (RIF-2) by mass spectrometry-guided isolation and total synthesis. *Chemistry* 28(8), e202103883.

Ramírez-Morales JE, Czichowski P, Besirlioglu V, Regestein L, Rabaey K, Blank L, Rosenbaum MA\* (2021) Lignin aromatics to PHA polymers: Nitrogen and oxygen are the Key factors for *Pseudomonas*. *ACS Sustain Chem Eng* 9(31), 10579-10590.

Schlembach I, Grünberger A, Rosenbaum M, Regestein L (2021) Measurement techniques to resolve and control population dynamics of mixed-culture processes. *Trends Biotechnol* 39(10), 1093-1109. (Review)

Schlosser N, Espino-Martínez J, Kloss F, Meyer F, Bardl B, Rosenbaum MA, Regestein L (2021) Host nutrition-based approach for biotechnological production of the antifungal cyclic lipopeptide jagaricin. *J Biotechnol* 336, 1-9.

Fricke J, Kargbo R, Regestein L, Lenz C, Peschel G, Rosenbaum MA, Sherwood A, Hoffmeister D (2020) Scalable hybrid synthetic/biocatalytic route to psilocybin. *Chem Eur J* 37(26), 8281-8285.

Guo H, Schwitalla JW, Benndorf R, Baunach M, Steinbeck C, Görls H, de Beer ZW, Regestein L, Beemelmans C (2020) Gene cluster activation in a bacterial symbiont leads to halogenated angucyclic maduralactomycins and spirocyclic actinospirols. *Org Lett* 22(7), 2634-2638.

Kufs JE, Hoefgen S, Rautschek J, Bissell AU, Graf C, Fiedler J, Braga D, Regestein L, Rosenbaum MA, Thiele J, Valiante V (2020) Rational design of flavonoid production routes using combinatorial and precursor-directed biosynthesis. *ACS Synth Biol* 9(7), 1823-1832.

Munch G, Schulte A, Mann M, Dinger R, Regestein L, Rehmann L, Büchs J (2020) Online measurement of CO<sub>2</sub> and total gas production in parallel anaerobic shake flask cultivations. *Biochem Eng J* 153, 107418.

Peña-Ortiz L, Graça AP, Guo H, Braga D, Köllner TG, Regestein L, Beemelmans C, Lackner G (2020) Structure elucidation of the redox cofactor mycofactocin reveals oligo-glycosylation by MftF. *Chem Sci* 11, 5182-5190.

Peña-Ortiz L, Schlembach I, Lackner G, Regestein L (2020) Impact of oxygen supply and scale up on *Mycobacterium smegmatis* cultivation and mycofactocin formation. *Front Bioeng Biotechnol* 8(1399), 593781.

Schlembach I, Tehrani H, Blank LM, Büchs J, Wierckx N, Regestein L, Rosenbaum MA (2020) Consolidated bioprocessing of cellulose to itaconic acid by a co-culture of *Trichoderma Reesei*

and *Ustilago Maydis*. *Biotechnol Biofuels* 13(1), 207.

Geinitz B, Rehman L, Büchs J, Regestein L (2019) Noninvasive tool for optical online monitoring of individual biomass concentrations in a defined coculture. *Biotechnol Bioeng* 117(4), 999-1011.

Heyman B, Lamm R, Tulke H, Regestein L, Büchs J (2019) Shake flask methodology for assessing the influence of the maximum oxygen transfer capacity on 2,3-butanediol production. *Microb Cell Fact* 18(1), 78.

Trottmann F, Franke J, Richter I, Ishida K, Cyrulies M, Dahse HM, Regestein L, Hertweck C (2019) Cyclopropanol warhead in malleicyprol confers virulence of human- and animal-pathogenic *Burkholderia* species. *Angew Chem Int Ed* 58(40), 14129-14133.

Kreyenschulte D, Heyman B, Eggert A, Maßmann T, Kalvelage C, Kossack R, Regestein L, Jupke A, Büchs J. (2018) *In situ* reactive extraction of itaconic acid during fermentation of *Aspergillus terreus*. *Biochem Eng J* 135, 133-141.

Regestein L, Klement T, Grande P, Kreyenschulte D, Heyman B, Maßmann T, Eggert A, Sengpiel R, Wang Y, Wierckx N, Blank LM, Spiess A, Leitner W, Bolm C, Wessling M, Jupke A, Rosenbaum M, Büchs J (2018) From beech wood to itaconic acid: Case study on biorefinery process integration. *Biotechnol Biofuels* 11, 279. (Review)

Antonov E, Schlembach I, Regestein L, Rosenbaum MA, Büchs J (2017) Process relevant screening of cellulolytic organisms for consolidated bioprocessing. *Biotechnol Biofuels* 10, 106.

Lara AR, Jaén KE, Sigala JC, Mühlmann M, Regestein L, Büchs J (2017) Characterization of Endogenous and Reduced Promoters for Oxygen-Limited Processes Using *Escherichia coli*. *ACS Synth Biol* 6(2), 344-356.

Lara AR, Jaén KE, Sigala JC, Regestein L, Büchs J (2017) Evaluation of microbial globin promoters for oxygen-limited processes using *Escherichia coli*. *J Biol Eng* 11, 39.

Schelden M, Lima W, Doerr E, Wunderlich M, Rehmann L, Büchs J, Regestein L (2017) Online measurement of viscosity for xanthan production in stirred tank reactors. *Biotechnology and Bioengineering* 114(5), 990-997.

Schlembach I, Regestein L, Rosenbaum MA (2017) Etablierung filamentöser Mischkulturen für Bioprozesse. *BIOspectrum* 23(3), 270-272.

Antonov E, Wirth S, Gerlach T, Schlembach I, Rosenbaum MA, Regestein L, Büchs J (2016) Efficient evaluation of cellulose digestibility by *Trichoderma reesei* Rut-C30 cultures in online monitored shake flasks. *Microb Cell Fact* 15(1), 164.

Kreyenschulte D, Emde F, Regestein L, Büchs J (2016) Computational minimization of the specific energy demand of large-scale aerobic fermentation processes based on small-scale data. *Chemical Engineering Science* 153, 270-283.

Meier K, Carstensen F, Wessling M, Regestein L, Büchs L (2016) Quasi-continuous fermentation in a reverse-flow diafiltration bioreactor. *Biochemical Engineering Journal* 91, 265-275.

Meier K, Klöckner W, Bonhage B, Antonov E, Regestein L, Büchs J (2016) Correlation for the maximum oxygen transfer capacity in shake flasks for a wide range of operating conditions and for

different culture media. *Biochemical Engineering Journal* 109, 228-235.

Sieben M, Steinhorn G, Müller C, Fuchs S, Ann Chin L, Regestein L, Büchs J (2016) Testing plasmid stability of *Escherichia coli* using the Continuously Operated Shaken BIOreactor System. *Biotechnol Prog* 32(6), 1418-1425.

Wunderlich M, Trampnau PP, Lopes EF, Büchs L, Regestein L (2016) Online in situ viscosity determination in stirred tank reactors by measurement of the heat transfer capacity *Chemical Engineering Science* 152, 116-126.

Kreyenschulte D, Paciok E, Regestein L, Blümich B, Büchs J (2015) Online monitoring of fermentation processes via non-invasive low-field NMR. *Biotechnol Bioeng* 112(9), 1810-1821.

Regestein L, Doerr EW, Staaden A, Rehmann L (2015) Impact of butyric acid on butanol formation by *Clostridium pasteurianum*. *Bioresour Technol* 196, 153-159.

Wewetzer SJ, Kunze M, Ladner T, Luchterhand B, Roth S, Rahmen N, Kloß R, Costa E Silva A, Regestein L, Büchs J (2015) Parallel use of shake flask and microtiter plate online measuring devices (RAMOS and BioLector) reduces the number of experiments in laboratory-scale stirred tank bioreactors. *J Biol Eng* 9, 9.

Meier K, Carstensen F, Scheeren C, Regestein L, Wessling M, Büchs J (2014) In situ product recovery of single-chain antibodies in a membrane bioreactor. *Biotechnol Bioeng* 111(8), 1566-1576.

Meier K, Carstensen F, Wessling M, Regestein L, Büchs J (2014) Quasi-continuous fermentation in a reverse-flow diafiltration bioreactor *Biochemical Engineering Journal* 91, 265-275.

Meier K, Djeljadini S, Regestein L, Büchs J, Carstensen F, Wessling M, Holland T, Raven N (2014) In situ cell retention of a CHO culture by a reverse-flow diafiltration membrane bioreactor. *Biotechnol Prog* 30(6), 1348-1355.

Meier K, Herweg E, Schmidt B, Klement T, Regestein L, Büchs L (2013) Quantifying the release of polymer additives from single-use materials by respiration activity monitoring *Polymer Testing* 32(6), 1064-1071.

Regestein L, Giese H, Zavrel M, Büchs J (2013) Comparison of two methods for designing calorimeters using stirred tank reactors. *Biotechnol Bioeng* 110(1), 180-190.

Regestein L, Maskow T, Tack A, Knabben I, Wunderlich M, Lerchner J, Büchs J (2013) Non-invasive online detection of microbial lysine formation in stirred tank bioreactors by using calorimetry. *Biotechnol Bioeng* 110(5), 1386-1395.

Regestein L, Wolf A, Schneider HJ, Maskow T, Mertens F, Büchs J (2012) A chip calorimeter for the monitoring of conventional bioreactors at elevated cell concentrations *Thermochimica Acta* 544, 10-16.

Lara AR, Knabben I, Regestein L, Sassi J, Caspeta L, Ramírez OT (2011) Comparison of oxygen enriched air vs. pressure cultivations to increase oxygen transfer and to scale-up plasmid DNA production fermentations *Engineering in Life Sciences* 11(4), 382-386.

Maskow T, Schubert T, Wolf A, Buchholz F, Regestein L, Büchs J, Mertens F, Harms H,

Lerchner J (2011) Potentials and limitations of miniaturized calorimeters for bioprocess monitoring. *Appl Microbiol Biotechnol* 92(1), 55-66.

Schmidt JK, Riedele C, Regestein L, Rausenberger J, Reichl U (2011) A novel concept combining experimental and mathematical analysis for the identification of unknown interspecies effects in a mixed culture. *Biotechnol Bioeng* 108(8), 1900-1911.

Knabben I, Regestein L, Grumbach C, Steinbusch S, Kunze G, Büchs J (2010) Online determination of viable biomass up to very high cell densities in *Arxula adenivorans* fermentations using an impedance signal. *J Biotechnol* 149(1-2), 60-66.

Knabben I, Regestein L, Marquering F, Steinbusch S, Lara AR, Büchs J (2010) High cell-density processes in batch mode of a genetically engineered *Escherichia coli* strain with minimized overflow metabolism using a pressurized bioreactor. *J Biotechnol* 150(1), 73-79.

\*equal contribution #corresponding author