

Publications

Boto ST, Gerges K, Bardl B, Rosenbaum MA (2025) Evaluation of yeast alcohol acetyltransferases for ethyl acetate production in *Clostridium ljungdahlii*. *Eng Life Sci* 25(1), e202400076.

Graf M*, Sarkar A*, Svensson CM, Munser AS, Schröder S, Hengoju S, Rosenbaum MA#, Figge MT# (2025) Rapid detection of microbial antibiotic susceptibility via deep learning supported analysis of angle-resolved scattered-light images of picoliter droplet cultivations. *Sens Actuators B Chem* 424, 136866.

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.

Harnisch F, Deutzmann JS, Boto ST, Rosenbaum MA (2024) Microbial electrosynthesis: opportunities for microbial pure cultures. *Trends Biotechnol* 42(8), 1035-1047. (Review)

Mahmoud Mohamed MM, Yang Z, Lum KY, Peschel G, Rosenbaum MA, Weber T, Coriani S, Gottfredsen CH, Ding L (2024) Genome-driven discovery of hygrocins in *Streptomyces rapamycinicus*. *J Nat Prod* 87(5), 1321-1329.

Man DKW, Hermans SM, Taubert M, Garcia SL, Hengoju S, Küsel K, Rosenbaum MA (2024) Enrichment of different taxa of the enigmatic candidate phyla radiation bacteria using a novel picolitre droplet technique. *ISME Commun* 4(1), ycae080.

Rosenbaum MA, Graf M (2024) Microfluidics: taking experimentation to the scale and diversity of microorganism. International Microbiology Literacy Initiative (Review)

Samimi A, Hengoju S, Rosenbaum MA (2024) Combinatorial sample preparation platform for droplet-based applications in microbiology. *Sens Actuators B Chem* 417,

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.

Yang Z, Qiao Y, Strøbech E, Morth JP, Walther G, Jørgensen TS, Lum KY, Peschel G, Rosenbaum MA, Previtali V, Clausen MH, Lukassen MV, Gottfredsen CH, Kurzai O, Weber T, Ding L (2024) Alligamycin A, an antifungal β -lactone spiroketal macrolide from *Streptomyces iranensis*. *Nat Commun* 15(1), 9259.

Boto ST, Bardl B, Harnisch F, Rosenbaum MA (2023) Microbial electrosynthesis with *Clostridium ljungdahlii* benefits from hydrogen electron mediation and permits a greater variety of products. *Green Chem* 25(11), 4375-4386.

Franco A, Chukwubuike A, Meiners C, Rosenbaum MA (2023) Exploring phenazine electron transfer interaction with elements of the respiratory pathways of *Pseudomonas putida* and *Pseudomonas aeruginosa*. *Bioelectrochemistry* 157, 108636.

Munser AS, Trost M, Schröder S, Graf M, Rosenbaum MA, Tünnermann A (2023) Analysis of very low bacterial counts in small sample volumes using angle-resolved light scattering. *Appl Opt* 62(2),

411-418.

Pourmasoumi F,* Hengoju S,* Beck K, Stephan P, Klopffleisch L, Hoernke M, Rosenbaum MA, Kries H (2023) Analysing megasynthetase mutants at high throughput using droplet microfluidics. *Chembiochem* 24(24), e202300680.

Yang Z, Qiao Y, Konakalla NC, Strøbech E, Harris P, Peschel G, Agler-Rosenbaum M, Weber T, Andreasson E, Ding L (2023) *Streptomyces* alleviate abiotic stress in plant by producing pteridic acids. *Nat Commun* 14(1), 7398.

Abdollahi M, Al Sbei S, Rosenbaum MA, Harnisch F (2022) The oxygen dilemma: The challenge of the anode reaction for microbial electrosynthesis from CO₂. *Front Microbiol* 13, 947550. (Review)

Finger M, Palacio-Barrera AM, Richter P, Schlembach I, Büchs J, Rosenbaum MA (2022) Tunable population dynamics in a synthetic filamentous coculture. *MicrobiologyOpen* 11(5), e1324.

Finger M, Sentek F, Hartmann L, Palacio-Barrera AM, Schlembach I, Rosenbaum MA, Büchs J (2022) Insights into *Streptomyces coelicolor* A3(2) growth and pigment formation with high-throughput online monitoring. *Eng Life Sci* 23(1), e2100151.

Franco A, Elbahnasy M, Rosenbaum MA (2022) Screening of natural phenazine producers for electroactivity in bioelectrochemical systems. *Microb Biotechnol* 16(3), 579-594.

Palacio-Barrera AM, Schlembach I, Finger M, Büchs J, Rosenbaum MA (2022) Reliable online measurement of population dynamics for filamentous co-cultures. *Microb Biotechnol* 15(11), 2773-2785.

Paquete C, Rosenbaum MA, Baneras L, Rotaru AE, Puig S (2022) Let's chat: Communication between electroactive microorganisms. *Bioresour Technol* 347, 126705. (Review)

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.

Viridis B, D Hoelzle R, Marchetti A, Boto ST, Rosenbaum MA, Blasco-Gómez R, Puig S, Freguia S, Villano M (2022) Electro-fermentation: Sustainable bioproductions steered by electricity. *Biotechnol Adv* 59, 107950. (Review)

Weber T, Hengoju S, Samimi A, Roth M, Tovar M, Rosenbaum MA (2022) Recovery and isolation of individual microfluidic picoliter droplets by triggered deposition. *Sens Actuators B Chem* 369, 132289.

Berger C, Rückert C, Blom J, Rabaey K, Kalinowski J, Rosenbaum MA (2021) Estimation of pathogenic potential of an environmental *Pseudomonas aeruginosa* isolate using comparative genomics. *Sci Rep* 11(1), 1370.

Chukwubuike A, Berger C, Mady A, Rosenbaum MA (2021) Role of phenazine-enzyme physiology for current generation in a bioelectrochemical system. *Microb Biotechnol* 14(4), 1613-1626.

Hengoju S, Shvydkiv O, Tovar M, Roth M, Rosenbaum MA (2021) Advantages of optical fibers for

facile and enhanced detection in droplet microfluidics. *Biosens Bioelectron* 200, 113910. (Review)

Kästner B, Hengoju S, Svensson CM, Figge MT, Rosenbaum MA (2021) Mit Tropfenmikrofluidik zu Hochgeschwindigkeits-Biotechnologie. *BIOspektrum* 27(3), 260-262. (Review)

Mahler L, Niehs SP, Martin K, Weber T, Scherlach K, Hertweck C, Roth M, Rosenbaum MA (2021) Highly parallelized droplet cultivation and prioritization of antibiotic producers from natural microbial communities. *eLife* 10, e64774.

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.

Agostino V, Lenic A, Bardl B, Rizzotto V, Phan A, Blank L, Rosenbaum M (2020) Electrophysiology of the facultative autotrophic bacterium *Desulfosporosinus orientis*. *Front Bioeng Biotechnol* 8, 457.

Askitosari T, Berger C, Tiso T, Harnisch F, Blank L, Rosenbaum M (2020) Coupling an electroactive *Pseudomonas putida* 2 KT2440 with bioelectrochemical rhamnolipid production. *Microorganisms* 8(12), 1959.

Farber P, Bastian D, Gräbel J, Klasen H, Molls C, Kroppen N, Pötschke L, Rosenbaum AM, Stegshuster G, Ueberholtz P (2020) Numerical analysis of mass transfer to the anode in a microbial fuel cell. In: Numerical analysis of mass transfer to the anode in a microbial fuel cell International Conference on Numerical Analysis and Applied Mathematics, ICNAAM 2019, Rhodes, Greece, 09/23/2019-09/28/2019, 2293, pp. 030036. AIP Chemical Physics Reviews.

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.

Hengoju S, Wohlfeil S, Munser AS, Shvydkiv O, Boehme S, Beckert E, Tovar M, Roth M, Rosenbaum MA (2020) Optofluidic detection setup for multi-parametric analysis of microbiological samples in droplets. *Biomicrofluidics* 14(2), 024109.

Klapper M, Schlabach K, Paschold A, Zhang S, Chowdhury S, Menzel KD, Rosenbaum MA, Stallforth P (2020) Biosynthesis of *pseudomonas*-derived butenolides. *Angew Chem Int Ed* 59(14), 5607-5610.

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.

Pasternak G, Askitosari TD, Rosenbaum MA (2020) Biosurfactants and synthetic surfactants in

bioelectrochemical systems: A mini-review. *Front Microbiol* 11, 358. (Review)

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.

Schmitz S, Rosenbaum MA (2020) Controlling the production of *Pseudomonas* phenazines by modulating the genetic repertoire. *ACS Chem Biol* 15(12), 3244-3252.

Tovar M, Mahler L, Buchheim S, Roth M, Rosenbaum M (2020) Monitoring and external control of pH in microfluidic droplets during microbial culturing. *Microb Cell Fact* 19(1), 16.

Askitosari TD, Boto S, Blank LM, Rosenbaum MA (2019) Boosting heterologous phenazine production in *Pseudomonas putida* KT2440 through the exploration of the natural sequence space. *Front Microbiol* 10, 1990.

Farber P, Gräbel J, Kroppen N, Pötschke L, Roos D, Rosenbaum M, Stegschuster G, Ueberholz P (2019) Electricity generation in a microbial fuel cell with textile carbon fibre anodes. *Comput Math Appl* 83, 4-23.

Kirchner K, Brückner I, Klaer K, Hammers-Wirtz M, Pinnekamp J, Rosenbaum MA (2019) Microbial counts and antibiotic resistances during conventional wastewater treatment and wastewater ozonation. *Ozone: Science & Engineering* 42(2), 108-119.

Pötschke L, Huber P, Schriever S, Rizzotto V, Gries T, Blank LM, Rosenbaum M (2019) Rational selection of carbon fiber properties for high-performance textile electrodes in bioelectrochemical systems. *Front Energy Res* 7, 100.

Agostino V, Rosenbaum M (2018) Sulfate-reducing electroautotrophs and their applications in bioelectrochemical systems. *Front Energy Res* 6, 55. (Review)

Brückner I, Kirchner K, Müller Y, Schiwy S, Klaer K, Dolny R, Wendt L, Könemann S, Pinnekamp J, Hollert H, Rosenbaum MA (2018) Status quo report on wastewater treatment plant, receiving water's biocoenosis and quality as basis for evaluation of large-scale ozonation process. *Water Sci Technol* 77(2), 337-345.

Brückner I, Stepkes H, Reichert J, Kirchner K, Rosenbaum M, Glasen S, Hammers-Wirtz M, Schiwy S, Müller Y, Shuliakevich A, Hollert H, Kohlgruber V, Klaer K, Pinnekamp J. (2018) Abwasser ozonung - Evaluierung des Nutzens für die aquatische Umwelt. *wwt*, 41-44. (Review)

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)

Schmitz S, Rosenbaum M (2018) Boosting mediated electron transfer in bioelectrochemical systems with tailored defined microbial cocultures. *Biotech Bioeng* 115(9), 2183-2193.

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

Berger C, Rosenbaum MA (2017) Spontaneous quorum sensing mutation modulates

electroactivity of *Pseudomonas aeruginosa* PA14. *Bioelectrochemistry* 117, 1-8.

Bosire EM, Rosenbaum MA (2017) Electrochemical Potential Influences Phenazine Production, Electron Transfer and Consequently Electric Current Generation by *Pseudomonas aeruginosa*. *Front Microbiol* [Accepted]

Rosenbaum MA, Berger C, Schmitz S, Uhlig R (2017) Microbial Electrosynthesis I: Pure and Defined Mixed Culture Engineering. *Adv Biochem Eng Biotechnol* 167, 181-202.

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

Bosire EM, Blank LM, Rosenbaum MA (2016) Strain- and Substrate-Dependent Redox Mediator and Electricity Production by *Pseudomonas aeruginosa*. *Appl Environ Microbiol* 82(16), 5026-5038.

Molitor B, Kirchner K, Henrich AW, Schmitz S, Rosenbaum MA (2016) Expanding the molecular toolkit for the homoacetogen *Clostridium ljungdahlii*. *Sci Rep* 6, 31518.

Schröder U, Greiner A, Rosenbaum MA, Harnisch F (2016) Mikrobielle Elektrochemie: Wie Mikroorganismen und Elektroden interagieren *Nachrichten aus der Chemie* 64(7-8), 732-737.

Schmitz S, Nies S, Wierckx N, Blank LM, Rosenbaum MA (2015) Engineering mediator-based electroactivity in the obligate aerobic bacterium *Pseudomonas putida* KT2440. *Front Microbiol* 6, 284.

Rosenbaum MA, Franks AE (2014) Microbial catalysis in bioelectrochemical technologies: status quo, challenges and perspectives. *Appl Microbiol Biotechnol* 98(2), 509-518.

Rosenbaum MA, Henrich AW (2014) Engineering microbial electrocatalysis for chemical and fuel production. *Curr Opin Biotechnol* 29, 93-98.

TerAvest MA, Rosenbaum MA, Kotloski NJ, Gralnick JA, Angenent LT (2014) Oxygen allows *Shewanella oneidensis* MR-1 to overcome mediator washout in a continuously fed bioelectrochemical system *Biotechnology* 111(4), 692-699.

Venkataraman A, Rosenbaum MA, Werner JJ, Winans SC, Angenent LT (2014) Metabolite transfer with the fermentation product 2,3-butanediol enhances virulence by *Pseudomonas aeruginosa*. *ISME J* 8(6), 1210-1220.

Angenent LT, Rosenbaum M (2013) Microbial electrocatalysis to guide biofuel and biochemical bioprocessing *Biofuels* 4(2), 131-134.

Friedman ES, Rosenbaum MA, Lee AW, Lipson DA, Land BR, Angenent LT (2012) A cost-effective and field-ready potentiostat that poises subsurface electrodes to monitor bacterial respiration. *Biosens Bioelectron* 32(1), 309-313.

Li Z, Venkataraman A, Rosenbaum MA, Angenent LT (2012) A laminar-flow microfluidic device for quantitative analysis of microbial electrochemical activity. *ChemSusChem* 5(6), 1119-1123.

Rosenbaum MA, Bar HY, Beg QK, Segrè D, Booth J, Cotta MA, Angenent LT (2012) Transcriptional analysis of *Shewanella oneidensis* MR-1 with an electrode compared to

Fe(III)citrate or oxygen as terminal electron acceptor. *PLOS One* 7(2), e30827.

Rosenbaum MA, Bar HY, Beg QK, Segrè D, Booth J, Cotta MA, Angenent LT (2011) *Shewanella oneidensis* in a lactate-fed pure-culture and a glucose-fed co-culture with *Lactococcus lactis* with an electrode as electron acceptor. *Bioresour Technol* 102(3), 2623-2628.

Venkataraman A, Rosenbaum MA, Perkins SD, Werner JJ, Angenent LT (2011) Metabolite-based mutualism between *Pseudomonas aeruginosa* PA14 and *Enterobacter aerogenes* enhances current generation in bioelectrochemical systems *Energy Environ. Sci.* 4, 4550-4559.

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