Ralf Takors

List of Publications by Year
in descending order

95 papers	3,190 citations	172207 29 h-index	168136 53 g-index
98 all docs	98 docs citations	98 times ranked	3227 citing authors

#	Article	IF	Citations
1	Simultaneous determination of multiple intracellular metabolites in glycolysis, pentose phosphate pathway and tricarboxylic acid cycle by liquid chromatographyâ€“mass spectrometry. Journal of Chromatography A, 2007, 1147, 153-164.	1.8	430
2	Quantification of Intracellular Metabolites in Escherichia coli K12 Using Liquid Chromatographic-Electrospray Ionization Tandem Mass Spectrometric Techniques. Analytical Biochemistry, 2001, 295, 129-137.	1.1	210
3	Metabolomics: quantification of intracellular metabolite dynamics. New Biotechnology, 2002, 19, 5-15.	2.7	194
4	Genome reduction boosts heterologous gene expression in Pseudomonas putida. Microbial Cell Factories, 2015, 14, 23.	1.9	142
5	Using gas mixtures of CO, CO₂ and H₂ as microbial substrates: the do's and don'ts of successful technology transfer from laboratory to production scale. Microbial Biotechnology, 2018, 11, 606-625.	2.0	126
6	High Substrate Uptake Rates Empower Vibrio natriegens as Production Host for Industrial Biotechnology. Applied and Environmental Microbiology, 2017, 83, .	1.4	112
7	Platform Engineering of Corynebacterium glutamicum with Reduced Pyruvate Dehydrogenase Complex Activity for Improved Production of <scp>l</scp> -Lysine, <scp>l</scp> -Valine, and 2-Ketoisovalerate. Applied and Environmental Microbiology, 2013, 79, 5566-5575.	1.4	98
8	Grand Research Challenges for Sustainable Industrial Biotechnology. Trends in Biotechnology, 2019, 37, 1042-1050.	4.9	94
9	Process strategies to enhance pyruvate production with recombinantEscherichia coli: From repetitive fed-batch to in situ product recovery with fully integrated electrodialysis. Biotechnology and Bioengineering, 2004, 85, 638-646.	1.7	83
10	Alkaline conditions in hydrophilic interaction liquid chromatography for intracellular metabolite quantification using tandem mass spectrometry. Analytical Biochemistry, 2015, 475, 4-13.	1.1	72
11	Engineering E. coli for large-scale production â€“ Strategies considering ATP expenses and transcriptional responses. Metabolic Engineering, 2016, 38, 73-85.	3.6	72
12	CO2/HCO3 â^' perturbations of simulated large scale gradients in a scale-down device cause fast transcriptional responses in Corynebacterium glutamicum. Applied Microbiology and Biotechnology, 2014, 98, 8563-8572.	1.7	63
13	Bioprocess scaleâ€up/down as integrative enabling technology: from fluid mechanics to systems biology and beyond. Microbial Biotechnology, 2017, 10, 1267-1274.	2.0	55
14	Simplified absolute metabolite quantification by gas chromatographyâ€“isotope dilution mass spectrometry on the basis of commercially available source material. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2011, 879, 3859-3870.	1.2	53
15	Monitoring and Modeling of the Reaction Dynamics in the Valine/Leucine Synthesis Pathway in Corynebacterium glutamicum. Biotechnology Progress, 2006, 22, 1071-1083.	1.3	45
16	CO2â€‰â€“â€‰Intrinsic Product, Essential Substrate, and Regulatory Trigger of Microbial and Mammalian Production Processes. Frontiers in Bioengineering and Biotechnology, 2015, 3, 108.	2.0	45
17	<i>Pseudomonas putida</i> KT2440 is naturally endowed to withstand industrialâ€scale stress conditions. Microbial Biotechnology, 2020, 13, 1145-1161.	2.0	42
18	Transcriptional response of <i>Escherichia coli</i> to ammonia and glucose fluctuations. Microbial Biotechnology, 2017, 10, 858-872.	2.0	41

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19	Metabolic engineering to guide evolution â€“ Creating a novel mode for L-valine production with Corynebacterium glutamicum. Metabolic Engineering, 2018, 47, 31-41.	3.6	41
20	Impact of different CO2/HCO3â^' levels on metabolism and regulation in Corynebacterium glutamicum. Journal of Biotechnology, 2013, 168, 331-340.	1.9	40
21	Escherichia coli HGT: Engineered for high glucose throughput even under slowly growing or resting conditions. Metabolic Engineering, 2017, 40, 93-103.	3.6	39
22	Dynamics of benzoate metabolism in Pseudomonas putida KT2440. Metabolic Engineering Communications, 2016, 3, 97-110.	1.9	37
23	Lagrangian Trajectories to Predict the Formation of Population Heterogeneity in Large-Scale Bioreactors. Bioengineering, 2017, 4, 27.	1.6	37
24	Compartmentâ€specific metabolomics for CHO reveals that ATP pools in mitochondria are much lower than in cytosol. Biotechnology Journal, 2015, 10, 1639-1650.	1.8	36
25	Valorization of pyrolysis water: a biorefinery side stream, for 1,2-propanediol production with engineered Corynebacterium glutamicum. Biotechnology for Biofuels, 2017, 10, 277.	6.2	35
26	Improving the carbon balance of fermentations by total carbon analyses. Biochemical Engineering Journal, 2014, 90, 162-169.	1.8	34
27	Modular systems metabolic engineering enables balancing of relevant pathways for l-histidine production with Corynebacterium glutamicum. Biotechnology for Biofuels, 2019, 12, 65.	6.2	34
28	Harnessing novel chromosomal integration loci to utilize an organosolvâ€derived hemicellulose fraction forÂisobutanol production with engineered <i>Corynebacterium glutamicum</i>. Microbial Biotechnology, 2018, 11, 257-263.	2.0	33
29	HILIC-Enabled 13C Metabolomics Strategies: Comparing Quantitative Precision and Spectral Accuracy of QTOF High- and QQQ Low-Resolution Mass Spectrometry. Metabolites, 2019, 9, 63.	1.3	32
30	Experimentally Validated Model Enables Debottlenecking of <i>in Vitro</i> Protein Synthesis and Identifies a Control Shift under <i>in Vivo</i> Conditions. ACS Synthetic Biology, 2017, 6, 1913-1921.	1.9	30
31	Continuous Adaptive Evolution of a Fast-Growing Corynebacterium glutamicum Strain Independent of Protocatechuate. Frontiers in Microbiology, 2019, 10, 1648.	1.5	29
32	The impact of CO gradients on C. ljungdahlii in a 125â€‾m3 bubble column: Mass transfer, circulation time and lifeline analysis. Chemical Engineering Science, 2019, 207, 410-423.	1.9	29
33	Exploiting Hydrogenophaga pseudoflava for aerobic syngas-based production of chemicals. Metabolic Engineering, 2019, 55, 220-230.	3.6	28
34	Predictability of <i>k</i>_L<i>a</i> in stirred tank reactors under multiple operating conditions using an Eulerâ€"Lagrange approach. Engineering in Life Sciences, 2016, 16, 633-642.	2.0	27
35	A guide to gene regulatory network inference for obtaining predictive solutions: Underlying assumptions and fundamental biological and data constraints. BioSystems, 2018, 174, 37-48.	0.9	27
36	Electron availability in CO₂, CO and H₂ mixtures constrains flux distribution, energy management and product formation in <i>Clostridium ljungdahlii</i>. Microbial Biotechnology, 2020, 13, 1831-1846.	2.0	27

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37	Zeroâ€growth bioprocesses: A challenge for microbial production strains and bioprocess engineering. Engineering in Life Sciences, 2017, 17, 27-35.	2.0	26
38	Phosphate limited fed-batch processes: Impact on carbon usage and energy metabolism in Escherichia coli. Journal of Biotechnology, 2014, 190, 96-104.	1.9	25
39	Changes in intracellular ATP-content of CHO cells as response to hyperosmolality. Biotechnology Progress, 2015, 31, 1212-1216.	1.3	24
40	Physiological Response of Corynebacterium glutamicum to Increasingly Nutrient-Rich Growth Conditions. Frontiers in Microbiology, 2018, 9, 2058.	1.5	24
41	Simulated oxygen and glucose gradients as a prerequisite for predicting industrial scale performance a priori. Biotechnology and Bioengineering, 2020, 117, 2760-2770.	1.7	24
42	The identification of enzyme targets for the optimization of a valine producing <i>Corynebacterium glutamicum</i> strain using a kinetic model. Biotechnology Progress, 2009, 25, 754-762.	1.3	23
43	Applying systems biology tools to study <i>n</i>â€butanol degradation in <i>Pseudomonas putida</i> KT2440. Engineering in Life Sciences, 2015, 15, 760-771.	2.0	23
44	Hyperosmotic stimulus study discloses benefits in ATP supply and reveals miRNA/mRNA targets to improve recombinant protein production of CHO cells. Biotechnology Journal, 2016, 11, 1037-1047.	1.8	23
45	Repetitive Short-Term Stimuli Imposed in Poor Mixing Zones Induce Long-Term Adaptation of E. coli Cultures in Large-Scale Bioreactors: Experimental Evidence and Mathematical Model. Frontiers in Microbiology, 2017, 8, 1195.	1.5	23
46	Switching between nitrogen and glucose limitation: Unraveling transcriptional dynamics in Escherichia coli. Journal of Biotechnology, 2017, 258, 2-12.	1.9	19
47	Deciphering the Adaptation of Corynebacterium glutamicum in Transition from Aerobiosis via Microaerobiosis to Anaerobiosis. Genes, 2018, 9, 297.	1.0	19
48	Protein production in Escherichia coli is guided by the trade-off between intracellular substrate availability and energy cost. Microbial Cell Factories, 2019, 18, 8.	1.9	19
49	From nutritional wealth to autophagy: In vivo metabolic dynamics in the cytosol, mitochondrion and shuttles of IgG producing CHO cells. Metabolic Engineering, 2019, 54, 145-159.	3.6	18
50	Engineering <i>Pseudomonas putida</i> KT2440 for the production of isobutanol. Engineering in Life Sciences, 2020, 20, 148-159.	2.0	18
51	Production of 1â€Octanol from <i>n</i>â€Octane by <i>Pseudomonas putida</i> KT2440. Chemie-Ingenieur-Technik, 2013, 85, 841-848.	0.4	16
52	Subpopulation-proteomics reveal growth rate, but not cell cycling, as a major impact on protein composition in Pseudomonas putida KT2440. AMB Express, 2014, 4, 71.	1.4	16
53	Environmental stress speeds up DNA replication in <i>Pseudomonas putida</i> in chemostat cultivations. Biotechnology Journal, 2016, 11, 155-163.	1.8	16
54	Engineering of a robust Escherichia coli chassis and exploitation for large-scale production processes. Metabolic Engineering, 2021, 67, 75-87.	3.6	15

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55	In Silico Prediction of Large-Scale Microbial Production Performance: Constraints for Getting Proper Data-Driven Models. Computational and Structural Biotechnology Journal, 2018, 16, 246-256.	1.9	13
56	Perfusion cultures require optimum respiratory ATP supply to maximize cellâ€specific and volumetric productivities. Biotechnology and Bioengineering, 2019, 116, 951-960.	1.7	12
57	Identifying the Growth Modulon of Corynebacterium glutamicum. Frontiers in Microbiology, 2019, 10, 974.	1.5	12
58	Predicting By-Product Gradients of Bakerâ€™s Yeast Production at Industrial Scale: A Practical Simulation Approach. Processes, 2020, 8, 1554.	1.3	12
59	<i>Pseudomonas putida</i> KT2440 endures temporary oxygen limitations. Biotechnology and Bioengineering, 2021, 118, 4735-4750.	1.7	12
60	Scalingâ€down biopharmaceutical production processes via a single multiâ€compartment bioreactor (SMCB). Engineering in Life Sciences, 2023, 23, .	2.0	12
61	Dynamic modeling reveals a three-step response of Saccharomyces cerevisiae to high CO2 levels accompanied by increasing ATP demands. FEMS Yeast Research, 2017, 17, .	1.1	11
62	CO ₂ /HCO ₃ ^{âˆ’} Accelerates Iron Reduction through Phenolic Compounds. MBio, 2020, 11, .	1.8	11
63	Identifying and Engineering Bottlenecks of Autotrophic Isobutanol Formation in Recombinant C. ljungdahlii by Systemic Analysis. Frontiers in Bioengineering and Biotechnology, 2021, 9, 647853.	2.0	10
64	Microâ€aerobic production of isobutanol with engineered Pseudomonas putida. Engineering in Life Sciences, 2021, 21, 475-488.	2.0	9
65	Towards valorization of pectin-rich agro-industrial residues: Engineering of Saccharomyces cerevisiae for co-fermentation of d-galacturonic acid and glycerol. Metabolic Engineering, 2022, 69, 1-14.	3.6	9
66	The Less the Better: How Suppressed Base Addition Boosts Production of Monoclonal Antibodies With Chinese Hamster Ovary Cells. Frontiers in Bioengineering and Biotechnology, 2019, 7, 76.	2.0	8
67	Synergistically applying 1â€D modeling and CFD for designing industrial scale bubble column syngas bioreactors. Engineering in Life Sciences, 2020, 20, 239-251.	2.0	8
68	Tracking dipeptides at work-uptake and intracellular fate in CHO culture. AMB Express, 2016, 6, 48.	1.4	7
69	Modeling Cell-Free Protein Synthesis Systemsâ€"Approaches and Applications. Frontiers in Bioengineering and Biotechnology, 2020, 8, 584178.	2.0	7
70	Revisiting the Growth Modulon of Corynebacterium glutamicum Under Glucose Limited Chemostat Conditions. Frontiers in Bioengineering and Biotechnology, 2020, 8, 584614.	2.0	7
71	Prediction of novel non-coding RNAs relevant for the growth of Pseudomonas putida in a bioreactor. Microbiology (United Kingdom), 2020, 166, 149-156.	0.7	7
72	Dataâ€driven in silico prediction of regulation heterogeneity and ATP demands of <i>Escherichia coli</i> in largeâ€scale bioreactors. Biotechnology and Bioengineering, 2021, 118, 265-278.	1.7	6

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73	CRISPRi enables fast growth followed by stable aerobic pyruvate formation in <i>Escherichia coli</i> without auxotrophy. Engineering in Life Sciences, 2022, 22, 70-84.	2.0	6
74	Quantitative Profiling of Endogenous Metabolites Using Hydrophilic Interaction Liquid Chromatographyâ€“Tandem Mass Spectrometry (HILIC-MS/MS). Methods in Molecular Biology, 2019, 1859, 185-207.	0.4	5
75	Comparison of <scp>l</scp>â€tyrosine containing dipeptides reveals maximum ATP availability for <scp>l</scp>â€prolylâ€<scp>l</scp>â€tyrosine in CHO cells. Engineering in Life Sciences, 2020, 20, 384-394.	2.0	5
76	Streamlining the Analysis of Dynamic 13C-Labeling Patterns for the Metabolic Engineering of Corynebacterium glutamicum as l-Histidine Production Host. Metabolites, 2020, 10, 458.	1.3	5
77	Balancing glucose and oxygen uptake rates to enable high amorphaâ€4,11â€diene production in Escherichia coli via the methylerythritol phosphate pathway. Biotechnology and Bioengineering, 2021, 118, 1317-1329.	1.7	5
78	Monitoring Intracellular Metabolite Dynamics in Saccharomyces cerevisiae during Industrially Relevant Famine Stimuli. Metabolites, 2022, 12, 263.	1.3	5
79	Editorial: How can we ensure the successful transfer from labâ€to largeâ€scale production?. Engineering in Life Sciences, 2016, 16, 587-587.	2.0	4
80	S â€adenosylmethionine and methylthioadenosine boost cellular productivities of antibody forming Chinese hamster ovary cells. Biotechnology and Bioengineering, 2020, 117, 3239-3247.	1.7	4
81	Reduced and Minimal Cell Factories in Bioprocesses: Towards a Streamlined Chassis. , 2020, , 1-44.		4
82	FAIR research data management as community approach in bioengineering. Engineering in Life Sciences, 2023, 23, .	2.0	4
83	Monitoring intracellular protein degradation in antibodyâ€producing Chinese hamster ovary cells. Engineering in Life Sciences, 2015, 15, 499-508.	2.0	3
84	Biochemical engineering provides mindset, tools and solutions for the driving questions of a sustainable future. Engineering in Life Sciences, 2020, 20, 5-6.	2.0	3
85	Compartment-specific metabolome labeling enables the identification of subcellular fluxes that may serve as promising metabolic engineering targets in CHO cells. Bioprocess and Biosystems Engineering, 2021, 44, 2567-2578.	1.7	3
86	Wachstumskinetik. , 2018, , 45-70.		3
87	Editorial overview: Microbial systems biology: systems biology prepares the ground for successful synthetic biology. Current Opinion in Microbiology, 2016, 33, viii-x.	2.3	2
88	Methylthioadenosine (MTA) boosts cellâ€specific productivities of Chinese hamster ovary cultures: dosage effects on proliferation, cell cycle and gene expression. FEBS Open Bio, 2020, 10, 2791-2804.	1.0	2
89	Comprehensive Analysis of C. glutamicum Anaplerotic Deletion Mutants Under Defined d-Glucose Conditions. Frontiers in Bioengineering and Biotechnology, 2020, 8, 602936.	2.0	2
90	Transcriptional profiling of the stringent response mutant strain E.Âcoli SR reveals enhanced robustness to largeâ€scale conditions. Microbial Biotechnology, 2021, 14, 993-1010.	2.0	2

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91	Compartmentâ€specific 13 C metabolic flux analysis reveals boosted NADPH availability coinciding with increased cellâ€specific productivity for IgG1 producing CHO cells after MTA treatment. Engineering in Life Sciences, 2021, 21, 832-847.	2.0	2
92	Synthetic mutualism in engineered <i>E. coli</i> mutant strains as functional basis for microbial production consortia. Engineering in Life Sciences, 0, , .	2.0	2
93	Euler-Lagrangian Simulations: A Proper Tool for Predicting Cellular Performance in Industrial Scale Bioreactors. Advances in Biochemical Engineering/Biotechnology, 2020, 177, 229-254.	0.6	1
94	A transhydrogenase-like mechanism in CHO cells comprising concerted cytosolic reaction and mitochondrial shuttling activities. Biochemical Engineering Journal, 2021, 170, 107986.	1.8	0
95	Systembiologie in der Bioverfahrenstechnik. , 2018, , 545-569.		0