Walter Martin van Gulik

List of Publications by Year
in descending order

109 papers	5,878 citations	61984 43 h-index	79698 73 g-index
111 all docs	111 docs citations	111 times ranked	4946 citing authors

#	Article	IF	Citations
1	Quantitative analysis of the microbial metabolome by isotope dilution mass spectrometry using uniformly 13C-labeled cell extracts as internal standards. Analytical Biochemistry, 2005, 336, 164-171.	2.4	375
2	Quantitative Evaluation of Intracellular Metabolite Extraction Techniques for Yeast Metabolomics. Analytical Chemistry, 2009, 81, 7379-7389.	6.5	309
3	Fumaric acid production by fermentation. Applied Microbiology and Biotechnology, 2008, 78, 379-389.	3.6	300
4	Role of Transcriptional Regulation in Controlling Fluxes in Central Carbon Metabolism of Saccharomyces cerevisiae. Journal of Biological Chemistry, 2004, 279, 9125-9138.	3.4	264
5	The fluxes through glycolytic enzymes in <i>Saccharomyces cerevisiae</i> are predominantly regulated at posttranscriptional levels. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 15753-15758.	7.1	223
6	Leakage-free rapid quenching technique for yeast metabolomics. Metabolomics, 2008, 4, 226-239.	3.0	210
7	Towards large scale fermentative production of succinic acid. Current Opinion in Biotechnology, 2014, 30, 190-197.	6.6	196
8	Measuring enzyme activities under standardized <i>inâ€ƒvivo</i>â€like conditions for systems biology. FEBS Journal, 2010, 277, 749-760.	4.7	147
9	Development and application of a differential method for reliable metabolome analysis in Escherichia coli. Analytical Biochemistry, 2009, 386, 9-19.	2.4	145
10	Metabolic-flux analysis of CEN.PK113-7D based on mass isotopomer measurements of C-labeled primary metabolites. FEMS Yeast Research, 2005, 5, 559-568.	2.3	137
11	Determination of the cytosolic free NAD/NADH ratio in <i>Saccharomyces cerevisiae</i> under steadyâ€state and highly dynamic conditions. Biotechnology and Bioengineering, 2008, 100, 734-743.	3.3	109
12	Fast sampling for quantitative microbial metabolomics. Current Opinion in Biotechnology, 2010, 21, 27-34.	6.6	105
13	Rapid sampling for analysis of in vivo kinetics using the BioScope: A system for continuous-pulse experiments. Biotechnology and Bioengineering, 2002, 79, 674-681.	3.3	102
14	An in vivo data-driven framework for classification and quantification of enzyme kinetics and determination of apparent thermodynamic data. Metabolic Engineering, 2011, 13, 294-306.	7.0	93
15	Atypical Glycolysis in Clostridium thermocellum. Applied and Environmental Microbiology, 2013, 79, 3000-3008.	3.1	92
16	Analysis of in vivo kinetics of glycolysis in aerobicSaccharomyces cerevisiaeby application of glucose and ethanol pulses. Biotechnology and Bioengineering, 2004, 88, 157-167.	3.3	85
17	Genomeâ€derived minimal metabolic models for <i>Escherichia coli</i> MG1655 with estimated in vivo respiratory ATP stoichiometry. Biotechnology and Bioengineering, 2010, 107, 369-381.	3.3	85
18	Simultaneous quantification of free nucleotides in complex biological samples using ion pair reversed phase liquid chromatography isotope dilution tandem mass spectrometry. Analytical Biochemistry, 2009, 388, 213-219.	2.4	83

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19	In vivo kinetics with rapid perturbation experiments in Saccharomyces cerevisiae using a second-generation BioScope. Metabolic Engineering, 2006, 8, 370-383.	7.0	81
20	Changes in the metabolome of associated with evolution in aerobic glucose-limited chemostats. FEMS Yeast Research, 2005, 5, 419-430.	2.3	80
21	Scaleâ€down of penicillin production in <i>Penicillium chrysogenum</i>. Biotechnology Journal, 2011, 6, 944-958.	3.5	80
22	Development of a low pH fermentation strategy for fumaric acid production by Rhizopus oryzae. Enzyme and Microbial Technology, 2011, 48, 39-47.	3.2	77
23	Dynamics of Glycolytic Regulation during Adaptation of <i>Saccharomyces cerevisiae</i> to Fermentative Metabolism. Applied and Environmental Microbiology, 2008, 74, 5710-5723.	3.1	74
24	An Engineered Yeast Efficiently Secreting Penicillin. PLoS ONE, 2009, 4, e8317.	2.5	73
25	Computational fluid dynamics simulation of an industrial P. chrysogenum fermentation with a coupled 9-pool metabolic model: Towards rational scale-down and design optimization. Chemical Engineering Science, 2018, 175, 12-24.	3.8	72
26	Integration of microbial kinetics and fluid dynamics toward modelâ€driven scaleâ€up of industrial bioprocesses. Engineering in Life Sciences, 2015, 15, 20-29.	3.6	71
27	A metabolome study of the steady-state relation between central metabolism, amino acid biosynthesis and penicillin production in Penicillium chrysogenum. Metabolic Engineering, 2008, 10, 10-23.	7.0	69
28	A new framework for the estimation of control parameters in metabolic pathways using lin-log kinetics. FEBS Journal, 2004, 271, 3348-3359.	0.2	65
29	Quantitative Analysis of the High Temperature-induced Glycolytic Flux Increase in Saccharomyces cerevisiae Reveals Dominant Metabolic Regulation. Journal of Biological Chemistry, 2008, 283, 23524-23532.	3.4	65
30	Fast dynamic response of the fermentative metabolism of <i>Escherichia coli</i> to aerobic and anaerobic glucose pulses. Biotechnology and Bioengineering, 2009, 104, 1153-1161.	3.3	65
31	Validation of a Metabolic Network for Saccharomyces cerevisiae Using Mixed Substrate Studies. Biotechnology Progress, 1996, 12, 434-448.	2.6	63
32	Optimization of cold methanol quenching for quantitative metabolomics of Penicillium chrysogenum. Metabolomics, 2012, 8, 727-735.	3.0	63
33	Short-Term Metabolome Dynamics and Carbon, Electron, and ATP Balances in Chemostat-Grown Saccharomyces cerevisiae CEN.PK 113-7D following a Glucose Pulse. Applied and Environmental Microbiology, 2006, 72, 3566-3577.	3.1	61
34	Control of the Glycolytic Flux in Saccharomyces cerevisiae Grown at Low Temperature. Journal of Biological Chemistry, 2007, 282, 10243-10251.	3.4	59
35	Revisiting the 13C-label distribution of the non-oxidative branch of the pentose phosphate pathway based upon kinetic and genetic evidence. FEBS Journal, 2005, 272, 4970-4982.	4.7	56
36	Labâ€scale fermentation tests of microchip with integrated electrochemical sensors for pH, temperature, dissolved oxygen and viable biomass concentration. Biotechnology and Bioengineering, 2008, 99, 884-892.	3.3	56

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37	Intracellular metabolite determination in the presence of extracellular abundance: Application to the penicillin biosynthesis pathway in <i>Penicillium chrysogenum</i>. Biotechnology and Bioengineering, 2010, 107, 105-115.	3.3	56
38	Bioprocess scaleâ€up/down as integrative enabling technology: from fluid mechanics to systems biology and beyond. Microbial Biotechnology, 2017, 10, 1267-1274.	4.2	55
39	Quantitative analysis of intracellular coenzymes in Saccharomyces cerevisiae using ion pair reversed phase ultra high performance liquid chromatography tandem mass spectrometry. Journal of Chromatography A, 2013, 1311, 115-120.	3.7	52
40	Induction of ajmalicine formation and related enzyme activities in Catharanthus roseus cells: effect of inoculum density. Applied Microbiology and Biotechnology, 1993, 39, 42-47.	3.6	50
41	Dynamic gene expression regulation model for growth and penicillin production in <i>Penicillium chrysogenum</i>. Biotechnology and Bioengineering, 2010, 106, 608-618.	3.3	49
42	Cytosolic NADPH metabolism in penicillin-G producing and non-producing chemostat cultures of Penicillium chrysogenum. Metabolic Engineering, 2007, 9, 112-123.	7.0	48
43	Escherichia coli responds with a rapid and large change in growth rate upon a shift from glucose-limited to glucose-excess conditions. Metabolic Engineering, 2011, 13, 307-318.	7.0	45
44	Development of quantitative metabolomics for Pichia pastoris. Metabolomics, 2012, 8, 284-298.	3.0	45
45	Enzymic analysis of NADPH metabolism in Î²-lactam-producing Penicillium chrysogenum: Presence of a mitochondrial NADPH dehydrogenase. Metabolic Engineering, 2006, 8, 91-101.	7.0	42
46	A 9â€pool metabolic structured kinetic model describing days to seconds dynamics of growth and product formation by <i>Penicillium chrysogenum</i>. Biotechnology and Bioengineering, 2017, 114, 1733-1743.	3.3	41
47	Quantitative analysis of metabolites in complex biological samples using ion-pair reversed-phase liquid chromatographyâ€“isotope dilution tandem mass spectrometry. Journal of Chromatography A, 2008, 1187, 103-110.	3.7	38
48	13 C-Labeled Gluconate Tracing as a Direct and Accurate Method for Determining the Pentose Phosphate Pathway Split Ratio in Penicillium chrysogenum. Applied and Environmental Microbiology, 2006, 72, 4743-4754.	3.1	37
49	Ajmalicine production by cell cultures of Catharanthus roseus: from shake flask to bioreactor. Plant Cell, Tissue and Organ Culture, 1994, 38, 85-91.	2.3	36
50	Metabolic flux and metabolic network analysis ofPenicillium chrysogenum using 2D [13C,1H] COSY NMR measurements and cumulative bondomer simulation. Biotechnology and Bioengineering, 2003, 83, 75-92.	3.3	36
51	Metabolome dynamic responses of Saccharomyces cerevisiae to simultaneous rapid perturbations in external electron acceptor and electron donor. FEMS Yeast Research, 2007, 7, 48-66.	2.3	36
52	Quantitative metabolomics analysis of amino acid metabolism in recombinant Pichia pastoris under different oxygen availability conditions. Microbial Cell Factories, 2012, 11, 83.	4.0	36
53	Flux response of glycolysis and storage metabolism during rapid feast/famine conditions in <i>Penicillium chrysogenum</i> using dynamic ¹³C labeling. Biotechnology Journal, 2014, 9, 372-385.	3.5	36
54	Changes in substrate availability in Escherichia coli lead to rapid metabolite, flux and growth rate responses. Metabolic Engineering, 2013, 16, 115-129.	7.0	35

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55	Formate as an Auxiliary Substrate for Glucose-Limited Cultivation of Penicillium chrysogenum : Impact on Penicillin G Production and Biomass Yield. Applied and Environmental Microbiology, 2007, 73, 5020-5025.	3.1	34
56	13C-Labeled metabolic flux analysis of a fed-batch culture of elutriatedSaccharomyces cerevisiae. FEMS Yeast Research, 2007, 7, 511-526.	2.3	34
57	In vivo kinetics of primary metabolism in Saccharomyces cerevisiae studied through prolonged chemostat cultivation. Metabolic Engineering, 2006, 8, 160-171.	7.0	31
58	Isotopic non-stationary 13C gluconate tracer method for accurate determination of the pentose phosphate pathway split-ratio in Penicillium chrysogenum. Metabolic Engineering, 2008, 10, 178-186.	7.0	31
59	Catching prompt metabolite dynamics in Escherichia coli with the BioScope at oxygen rich conditions. Metabolic Engineering, 2010, 12, 477-487.	7.0	30
60	Longâ€term adaptation of <i>Saccharomyces cerevisiae</i> to the burden of recombinant insulin production. Biotechnology and Bioengineering, 2013, 110, 2749-2763.	3.3	29
61	Fast Sampling of the Cellular Metabolome. Methods in Molecular Biology, 2012, 881, 279-306.	0.9	28
62	Degeneration of penicillin production in ethanol-limited chemostat cultivations of Penicillium chrysogenum: A systems biology approach. BMC Systems Biology, 2011, 5, 132.	3.0	27
63	Comparative performance of different scaleâ€down simulators of substrate gradients in <i>Penicillium chrysogenum</i> cultures: the need of a biological systems response analysis. Microbial Biotechnology, 2018, 11, 486-497.	4.2	27
64	Growth-rate dependency of de novo resveratrol production in chemostat cultures of an engineered Saccharomyces cerevisiae strain. Microbial Cell Factories, 2015, 14, 133.	4.0	26
65	Chapter 1 Plant Biotechnology for the Production of Alkaloids: Present Status and Prospects. Alkaloids: Chemistry and Pharmacology, 1991, 40, 1-187.	0.2	24
66	Determination of the<i>in vivo</i>NAD:NADH ratio in<i>Saccharomyces cerevisiae</i>under anaerobic conditions, using alcohol dehydrogenase as sensor reaction. Yeast, 2015, 32, 541-557.	1.7	24
67	Development of tools for quantitative intracellular metabolomics of Aspergillus niger chemostat cultures. Metabolomics, 2015, 11, 1253-1264.	3.0	24
68	pH-Dependent Uptake of Fumaric Acid in Saccharomyces cerevisiae under Anaerobic Conditions. Applied and Environmental Microbiology, 2012, 78, 705-716.	3.1	23
69	Differential proteomic analysis by SWATH-MS unravels the most dominant mechanisms underlying yeast adaptation to non-optimal temperatures under anaerobic conditions. Scientific Reports, 2020, 10, 22329.	3.3	22
70	Novel insights in transport mechanisms and kinetics of phenylacetic acid and penicillinâ€G in <i>Penicillium chrysogenum</i>. Biotechnology Progress, 2012, 28, 337-348.	2.6	21
71	Pathway engineering strategies for improved product yield in yeast-based industrial ethanol production. Synthetic and Systems Biotechnology, 2022, 7, 554-566.	3.7	21
72	Selection and subsequent physiological characterization of industrial Saccharomyces cerevisiae strains during continuous growth at sub- and- supra optimal temperatures. Biotechnology Reports (Amsterdam, Netherlands), 2020, 26, e00462.	4.4	19

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73	Effects of carbon dioxide, air flow rate, and inoculation density on the batch growth of Catharanthus roseus cell suspensions in stirred fermentors. Biotechnology Progress, 1994, 10, 335-339.	2.6	18
74	Application of metabolome data in functional genomics: A conceptual strategy. Metabolic Engineering, 2005, 7, 302-310.	7.0	17
75	Characterization of an experimental miniature bioreactor for cellular perturbation studies. Biotechnology and Bioengineering, 2006, 95, 1032-1042.	3.3	17
76	Power input effects on degeneration in prolonged penicillin chemostat cultures: A systems analysis at flux, residual glucose, metabolite, and transcript levels. Biotechnology and Bioengineering, 2018, 115, 114-125.	3.3	17
77	The coupling between catabolism and anabolism of Methanobacterium thermoautotrophicum in H2- and iron-limited continuous cultures. Enzyme and Microbial Technology, 1999, 25, 784-794.	3.2	16
78	Intracellular product recycling in high succinic acid producing yeast at low pH. Microbial Cell Factories, 2017, 16, 90.	4.0	15
79	Physiological responses of Saccharomyces cerevisiae to industrially relevant conditions: Slow growth, low pH, and high CO 2 levels. Biotechnology and Bioengineering, 2020, 117, 721-735.	3.3	15
80	A dynamic model-based preparation of uniformly-13C-labeled internal standards facilitates quantitative metabolomics analysis of Penicillium chrysogenum. Journal of Biotechnology, 2019, 299, 21-31.	3.8	14
81	Development of a system for the onâ€line measurement of carbon dioxide production in microbioreactors: Application to aerobic batch cultivations of <i>Candida utilis</i>. Biotechnology Progress, 2009, 25, 892-897.	2.6	12
82	Aerobic batch cultivation in micro bioreactor with integrated electrochemical sensor array. Biotechnology Progress, 2010, 26, 293-300.	2.6	12
83	In vivo kinetic analysis of the penicillin biosynthesis pathway using PAA stimulus response experiments. Metabolic Engineering, 2015, 32, 155-173.	7.0	12
84	Comparative fluxome and metabolome analysis for overproduction of succinate in <i>Escherichia coli</i>. Biotechnology and Bioengineering, 2016, 113, 817-829.	3.3	12
85	Quantitative Physiology of Non-Energy-Limited Retentostat Cultures of Saccharomyces cerevisiae at Near-Zero Specific Growth Rates. Applied and Environmental Microbiology, 2019, 85, .	3.1	12
86	Uncoupling growth and succinic acid production in an industrial <i>Saccharomyces cerevisiae</i> strain. Biotechnology and Bioengineering, 2021, 118, 1557-1567.	3.3	12
87	Reconstruction of the oxygen uptake and carbon dioxide evolution rates of microbial cultures at near-neutral pH during highly dynamic conditions. Biochemical Engineering Journal, 2014, 83, 42-54.	3.6	11
88	Co-fermentation of sugarcane bagasse hydrolysate and molasses by Clostridium saccharoperbutylacetonicum: Effect on sugar consumption and butanol production. Industrial Crops and Products, 2021, 167, 113512.	5.2	11
89	A system for accurate on-line measurement of total gas consumption or production rates in microbioreactors. Chemical Engineering Science, 2009, 64, 455-458.	3.8	10
90	Cytosolic NADPH balancing in Penicillium chrysogenum cultivated on mixtures of glucose and ethanol. Applied Microbiology and Biotechnology, 2011, 89, 63-72.	3.6	9

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91	Dynamics in redox metabolism, from stoichiometry towards kinetics. Current Opinion in Biotechnology, 2020, 64, 116-123.	6.6	9
92	Identification of informative metabolic responses using a minibioreactor: a small step change in the glucose supply rate creates a large metabolic response in <i>Saccharomyces cerevisiae</i>. Yeast, 2012, 29, 95-110.	1.7	8
93	Scalable microfluidic droplet on-demand generator for non-steady operation of droplet-based assays. Lab on A Chip, 2020, 20, 1398-1409.	6.0	8
94	The Hagenâ€"Poiseuille pump for parallel fed-batch cultivations in microbioreactors. Chemical Engineering Science, 2009, 64, 1877-1884.	3.8	7
95	Conceptual Process Design of Integrated Fermentation, Deacylation, and Crystallization in the Production of Î²-Lactam Antibiotics. Industrial & Engineering Chemistry Research, 2009, 48, 4352-4364.	3.7	7
96	Stoichiometry and kinetics of single and mixed substrate uptake in Aspergillus niger. Bioprocess and Biosystems Engineering, 2018, 41, 157-170.	3.4	7
97	Quantitative determination of glucose transfer between cocurrent laminar water streams in a Hâ€shaped microchannel. Biotechnology Progress, 2009, 25, 1826-1832.	2.6	5
98	Comparative Fluxome and Metabolome Analysis of Formate as an Auxiliary Substrate for Penicillin Production in Glucoseâ€Limited Cultivation of Penicillium chrysogenum. Biotechnology Journal, 2019, 14, 1900009.	3.5	5
99	Monitoring Intracellular Metabolite Dynamics in Saccharomyces cerevisiae during Industrially Relevant Famine Stimuli. Metabolites, 2022, 12, 263.	2.9	5
100	Genome-wide effect of non-optimal temperatures under anaerobic conditions on gene expression in Saccharomyces cerevisiae. Genomics, 2022, 114, 110386.	2.9	5
101	Determination of Î´â€[<scp>L</scp>â€Î±â€aminoadipyl]â€<scp>L</scp>â€cysteinylâ€<scp>D</scp>â€valine in cell extracts of Penicillium chrysogenum using ion pairâ€RPâ€UPLCâ€MS/MS. Journal of Separation Science, 2012, 35, 225-230.	2.5	4
102	Transport and metabolism of fumaric acid in <i>Saccharomyces cerevisiae</i> in aerobic glucoseâ€limited chemostat culture. Yeast, 2016, 33, 145-161.	1.7	4
103	Continuous production of enzymes under carbon-limited conditions by Trichoderma harzianum P49P11. Fungal Biology, 2021, 125, 177-183.	2.5	4
104	A possible influence of extracellular polysaccharides on the analysis of intracellular metabolites from Trichoderma harzianum grown under carbon-limited conditions. Fungal Biology, 2021, 125, 368-377.	2.5	4
105	Mathematical modelling for the optimization of cellulase production using glycerol for cell growth and cellulose as the inducer substrate. Chemical Engineering Science: X, 2020, 8, 100085.	1.5	3
106	Analysis of the proteins secreted by Trichoderma harzianum P49P11 under carbon-limited conditions. Journal of Proteomics, 2020, 227, 103922.	2.4	3
107	Influence of oxygen concentration on the metabolism of <i>Penicillium chrysogenum</i>. Engineering in Life Sciences, 2023, 23, .	3.6	2
108	Fedâ€Batch Droplet Nanobioreactor for Controlled Growth of Cyberlindnera (Pichia) jadinii : A Proofâ€Ofâ€Concept Demonstration. Advanced Materials Technologies, 2021, 6, 2100083.	5.8	1

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109	Fast Sampling of the Cellular Metabolome. Methods in Molecular Biology, 2022, 2349, 11-39.	0.9	0