Hans Westerhoff

List of Publications by Citations

431 papers	19,653 citations	75 h-index	123 g-index
447 ext. papers	21,405 ext. citations	5.3 avg, IF	6.42 L-index

#	Paper	IF	Citations
431	A functional genomics strategy that uses metabolome data to reveal the phenotype of silent mutations. *Nature Biotechnology*, **2001**, 19, 45-50	44.5	839
430	A community-driven global reconstruction of human metabolism. *Nature Biotechnology*, **2013**, 31, 419-25	44.5	746
429	Can yeast glycolysis be understood in terms of in vitro kinetics of the constituent enzymes? Testing biochemistry. *FEBS Journal*, **2000**, 267, 5313-29		498
428	A consensus yeast metabolic network reconstruction obtained from a community approach to systems biology. *Nature Biotechnology*, **2008**, 26, 1155-60	44.5	471
427	The evolution of molecular biology into systems biology. *Nature Biotechnology*, **2004**, 22, 1249-52	44.5	392
426	The nature of systems biology. *Trends in Microbiology*, **2007**, 15, 45-50	12.4	356
425	Cancer: a Systems Biology disease. *BioSystems*, **2006**, 83, 81-90	1.9	298
424	Untangling the wires: a strategy to trace functional interactions in signaling and gene networks. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 12841-6	11.5	297
423	The glycolytic flux in Escherichia coli is controlled by the demand for ATP. *Journal of Bacteriology*, **2002**, 184, 3909-16	3.5	278
422	Transcriptome meets metabolome: hierarchical and metabolic regulation of the glycolytic pathway. *FEBS Letters*, **2001**, 500, 169-71	3.8	268
421	Magainins and the disruption of membrane-linked free-energy transduction. *Proceedings of the National Academy of Sciences of the United States of America*, **1989**, 86, 6597-601	11.5	251
420	The danger of metabolic pathways with turbo design. *Trends in Biochemical Sciences*, **1998**, 23, 162-9	10.3	198
419	Why cytoplasmic signalling proteins should be recruited to cell membranes. *Trends in Cell Biology*, **2000**, 10, 173-8	18.3	193
418	The fluxes through glycolytic enzymes in Saccharomyces cerevisiae are predominantly regulated at posttranscriptional levels. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 15753-8	11.5	192
417	An alternative PII protein in the regulation of glutamine synthetase in Escherichia coli. *Molecular Microbiology*, **1996**, 21, 133-46	4.1	183
416	A minimal hypothesis for membrane-linked free-energy transduction. The role of independent, small coupling units. *Biochimica Et Biophysica Acta - Reviews on Bioenergetics*, **1984**, 768, 257-92		182
415	Glycolysis in bloodstream form Trypanosoma brucei can be understood in terms of the kinetics of the glycolytic enzymes. *Journal of Biological Chemistry*, **1997**, 272, 3207-15	5.4	171

414	Metabolic engineering of lactic acid bacteria, the combined approach: kinetic modelling, metabolic control and experimental analysis. *Microbiology (United Kingdom)*, **2002**, 148, 1003-1013	2.9	170
413	Modern theories of metabolic control and their applications (review). *Bioscience Reports*, **1984**, 4, 1-22	4.1	165
412	Control of MAPK signalling: from complexity to what really matters. *Oncogene*, **2005**, 24, 5533-42	9.2	158
411	Expression of nitrite reductase in Nitrosomonas europaea involves NsrR, a novel nitrite-sensitive transcription repressor. *Molecular Microbiology*, **2004**, 54, 148-58	4.1	156
410	Cytosolic triglycerides and oxidative stress in central obesity: the missing link between excessive atherosclerosis, endothelial dysfunction, and beta-cell failure?. *Atherosclerosis*, **2000**, 148, 17-21	3.1	156
409	Compartmentation protects trypanosomes from the dangerous design of glycolysis. *Proceedings of the National Academy of Sciences of the United States of America*, **2000**, 97, 2087-92	11.5	155
408	Acetaldehyde mediates the synchronization of sustained glycolytic oscillations in populations of yeast cells. *FEBS Journal*, **1996**, 235, 238-41		154
407	Control theory of regulatory cascades. *Journal of Theoretical Biology*, **1991**, 153, 255-85	2.3	151
406	How enzymes can capture and transmit free energy from an oscillating electric field. *Proceedings of the National Academy of Sciences of the United States of America*, **1986**, 83, 4734-8	11.5	151
405	Nitrogen assimilation in Escherichia coli: putting molecular data into a systems perspective. *Microbiology and Molecular Biology Reviews*, **2013**, 77, 628-95	13.2	147
404	A wave of reactive oxygen species (ROS)-induced ROS release in a sea of excitable mitochondria. *Antioxidants and Redox Signaling*, **2006**, 8, 1651-65	8.4	143
403	What controls glycolysis in bloodstream form Trypanosoma brucei?. *Journal of Biological Chemistry*, **1999**, 274, 14551-9	5.4	142
402	Metabolic control theory: its role in microbiology and biotechnology. *FEMS Microbiology Letters*, **1986**, 39, 305-320	2.9	141
401	Matrix method for determining steps most rate-limiting to metabolic fluxes in biotechnological processes. *Biotechnology and Bioengineering*, **1987**, 30, 101-7	4.9	141
400	GlnK, a PII-homologue: structure reveals ATP binding site and indicates how the T-loops may be involved in molecular recognition. *Journal of Molecular Biology*, **1998**, 282, 149-65	6.5	139
399	The signal transduction function for oxidative phosphorylation is at least second order in ADP. *Journal of Biological Chemistry*, **1996**, 271, 27995-8	5.4	133
398	Effects of oscillations and energy-driven fluctuations on the dynamics of enzyme catalysis and free-energy transduction. *Physical Review A*, **1989**, 39, 6416-6435	2.6	128
397	Thermodynamic efficiency of microbial growth is low but optimal for maximal growth rate. *Proceedings of the National Academy of Sciences of the United States of America*, **1983**, 80, 305-9	11.5	126

396	How do enzyme activities control metabolite concentrations? An additional theorem in the theory of metabolic control. *FEBS Journal*, **1984**, 142, 425-30		126
395	Effects of sequestration on signal transduction cascades. *FEBS Journal*, **2006**, 273, 895-906	5.7	122
394	Quantification of information transfer via cellular signal transduction pathways. *FEBS Letters*, **1997**, 414, 430-4	3.8	120
393	Principles behind the multifarious control of signal transduction. ERK phosphorylation and kinase/phosphatase control. *FEBS Journal*, **2005**, 272, 244-58	5.7	117
392	Measuring enzyme activities under standardized in vivo-like conditions for systems biology. *FEBS Journal*, **2010**, 277, 749-60	5.7	115
391	Quantifying heterogeneity: flow cytometry of bacterial cultures. *Antonie Van Leeuwenhoek*, **1991**, 60, 145-58	2.1	115
390	Unraveling the complexity of flux regulation: a new method demonstrated for nutrient starvation in Saccharomyces cerevisiae. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 2166-71	11.5	110
389	Compartmentation prevents a lethal turbo-explosion of glycolysis in trypanosomes. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 17718-23	11.5	108
388	Functional Synergism of the Magainins PGLa and Magainin-2 in Escherichia coli, Tumor Cells and Liposomes. *FEBS Journal*, **1995**, 228, 257-264		108
387	Nitrite reductase of Nitrosomonas europaea is not essential for production of gaseous nitrogen oxides and confers tolerance to nitrite. *Journal of Bacteriology*, **2002**, 184, 2557-60	3.5	107
386	Can free energy be transduced from electric noise?. *Proceedings of the National Academy of Sciences of the United States of America*, **1987**, 84, 434-8	11.5	107
385	Structure and partitioning of bacterial DNA: determined by a balance of compaction and expansion forces?. *FEMS Microbiology Letters*, **1995**, 131, 235-42	2.9	105
384	FnrP and NNR of Paracoccus denitrificans are both members of the FNR family of transcriptional activators but have distinct roles in respiratory adaptation in response to oxygen limitation. *Molecular Microbiology*, **1997**, 23, 893-907	4.1	103
383	How yeast cells synchronize their glycolytic oscillations: a perturbation analytic treatment. *Biophysical Journal*, **2000**, 78, 1087-93	2.9	103
382	Coordinated behavior of mitochondria in both space and time: a reactive oxygen species-activated wave of mitochondrial depolarization. *Biophysical Journal*, **2004**, 87, 2022-34	2.9	101
381	Intracellular glucose concentration in derepressed yeast cells consuming glucose is high enough to reduce the glucose transport rate by 50%. *Journal of Bacteriology*, **1998**, 180, 556-62	3.5	100
380	Understanding glucose transport by the bacterial phosphoenolpyruvate:glycose phosphotransferase system on the basis of kinetic measurements in vitro. *Journal of Biological Chemistry*, **2000**, 275, 34909-21	5.4	99
379	Modular analysis of the control of complex metabolic pathways. *Biophysical Chemistry*, **1993**, 48, 1-17	3.5	99

378	Thermodynamics of growth. Non-equilibrium thermodynamics of bacterial growth. The phenomenological and the mosaic approach. *Biochimica Et Biophysica Acta - Reviews on Bioenergetics*, **1982**, 683, 181-220		98
377	Towards building the silicon cell: a modular approach. *BioSystems*, **2006**, 83, 207-16	1.9	97
376	Emergence and Its Place in Nature: A Case Study of Biochemical Networks. *Synthese*, **2005**, 145, 131-164	0.8	97
375	Transduction of intracellular and intercellular dynamics in yeast glycolytic oscillations. *Biophysical Journal*, **2000**, 78, 1145-53	2.9	97
374	DNA supercoiling depends on the phosphorylation potential in Escherichia coli. *Molecular Microbiology*, **1996**, 20, 351-60	4.1	95
373	Metabolic control analysis of glycolysis in trypanosomes as an approach to improve selectivity and effectiveness of drugs. *Molecular and Biochemical Parasitology*, **2000**, 106, 1-10	1.9	93
372	Metabolite profiling of recombinant CHO cells: designing tailored feeding regimes that enhance recombinant antibody production. *Biotechnology and Bioengineering*, **2011**, 108, 3025-31	4.9	92
371	DNA supercoiling by DNA gyrase. A static head analysis. *Cell Biophysics*, **1988**, 12, 157-81		92
370	A model of yeast glycolysis based on a consistent kinetic characterisation of all its enzymes. *FEBS Letters*, **2013**, 587, 2832-41	3.8	91
369	Modular Response Analysis of Cellular Regulatory Networks. *Journal of Theoretical Biology*, **2002**, 218, 507-520	2.3	91
368	Contribution of glucose transport to the control of the glycolytic flux in Trypanosoma brucei. *Proceedings of the National Academy of Sciences of the United States of America*, **1999**, 96, 10098-103	11.5	91
367	Mutational analysis of the nor gene cluster which encodes nitric-oxide reductase from Paracoccus denitrificans. *FEBS Journal*, **1996**, 242, 592-600		91
366	Recurrent design patterns in the feedback regulation of the mammalian signalling network. *Molecular Systems Biology*, **2008**, 4, 190	12.2	90
365	Kinetics of daunorubicin transport by P-glycoprotein of intact cancer cells. *FEBS Journal*, **1992**, 207, 567-79		90
364	Implications of macromolecular crowding for signal transduction and metabolite channeling. *Proceedings of the National Academy of Sciences of the United States of America*, **1998**, 95, 10547-52	11.5	89
363	DNA supercoiling in Escherichia coli is under tight and subtle homeostatic control, involving gene-expression and metabolic regulation of both topoisomerase I and DNA gyrase. *FEBS Journal*, **2002**, 269, 1662-9		84
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361	Modular Response Analysis of Cellular Regulatory Networks. *Journal of Theoretical Biology*, **2002**, 218, 507-520	2.3	82

360	The two opposing activities of adenylyl transferase reside in distinct homologous domains, with intramolecular signal transduction. *EMBO Journal*, **1997**, 16, 5562-71	13	79
359	Integrated multilaboratory systems biology reveals differences in protein metabolism between two reference yeast strains. *Nature Communications*, **2010**, 1, 145	17.4	78
358	Sustained oscillations in free-energy state and hexose phosphates in yeast **1996**, 12, 731-740		77
357	The use of lac-type promoters in control analysis. *FEBS Journal*, **1993**, 211, 181-91		75
356	Mosaic protonic coupling hypothesis for free energy transduction. *FEBS Letters*, **1984**, 165, 1-5	3.8	75
355	Nitrosomonas europaea expresses a nitric oxide reductase during nitrification. *Journal of Bacteriology*, **2004**, 186, 4417-21	3.5	74
354	The genes of the glutamine synthetase adenylylation cascade are not regulated by nitrogen in Escherichia coli. *Molecular Microbiology*, **1993**, 9, 443-57	4.1	74
353	Nitrite and nitric oxide reduction in Paracoccus denitrificans is under the control of NNR, a regulatory protein that belongs to the FNR family of transcriptional activators. *FEBS Letters*, **1995**, 360, 151-4	3.8	73
352	The multidrug-resistance-reverser verapamil interferes with cellular P-glycoprotein-mediated pumping of daunorubicin as a non-competing substrate. *FEBS Journal*, **1994**, 221, 363-73		72
351	An in vivo control map for the eukaryotic mRNA translation machinery. *Molecular Systems Biology*, **2013**, 9, 635	12.2	71
350	Around the growth phase transition S. cerevisiae's make-up favours sustained oscillations of intracellular metabolites. *FEBS Letters*, **1993**, 318, 80-2	3.8	71
349	Control and regulation of gene expression: quantitative analysis of the expression of phosphoglycerate kinase in bloodstream form Trypanosoma brucei. *Journal of Biological Chemistry*, **2008**, 283, 2495-507	5.4	70
348	Control of glycolytic dynamics by hexose transport in Saccharomyces cerevisiae. *Biophysical Journal* , **2001**, 80, 626-34	2.9	70
347	Bacteriorhodopsin in liposomes. II. Experimental evidence in support of a theoretical model. *Biochimica Et Biophysica Acta - Bioenergetics*, **1979**, 547, 561-82	4.6	70
346	Testing biochemistry revisited: how in vivo metabolism can be understood from in vitro enzyme kinetics. *PLoS Computational Biology*, **2012**, 8, e1002483	5	68
345	Magainin 2 amide and analogues. Antimicrobial activity, membrane depolarization and susceptibility to proteolysis. *FEBS Letters*, **1989**, 249, 219-23	3.8	68
344	Nitric oxide is a signal for NNR-mediated transcription activation in Paracoccus denitrificans. *Journal of Bacteriology*, **1999**, 181, 4129-32	3.5	68
343	Systems biology: the elements and principles of life. *FEBS Letters*, **2009**, 583, 3882-90	3.8	66

342	Systems biology towards life in silico: mathematics of the control of living cells. *Journal of Mathematical Biology*, **2009**, 58, 7-34	2	66
341	Metabolic control analysis indicates a change of strategy in the treatment of cancer. *Mitochondrion*, **2010**, 10, 626-39	4.9	63
340	Signal transduction in bacteria: phospho-neural network(s) in Escherichia coli?. *FEMS Microbiology Reviews*, **1995**, 16, 309-21	15.1	63
339	Control analysis for autonomously oscillating biochemical networks. *Biophysical Journal*, **2002**, 82, 99-108	3.9	62
338	Noise management by molecular networks. *PLoS Computational Biology*, **2009**, 5, e1000506	5	61
337	Autoamplification of a two-component regulatory system results in "learning" behavior. *Journal of Bacteriology*, **2001**, 183, 4914-7	3.5	60
336	Super life--how and why 'cell selection' leads to the fastest-growing eukaryote. *FEBS Journal*, **2009**, 276, 254-70	5.7	58
335	How to recognize monofunctional units in a metabolic system. *Journal of Theoretical Biology*, **1996**, 179, 213-28	2.3	57
334	Product dependence and bifunctionality compromise the ultrasensitivity of signal transduction cascades. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 1170-5	11.5	56
333	Channelling can decrease pool size. *FEBS Journal*, **1992**, 204, 257-66		56
332	An additional PII in Escherichia coli: a new regulatory protein in the glutamine synthetase cascade. *FEMS Microbiology Letters*, **1995**, 132, 153-7	2.9	54
331	The multifarious short-term regulation of ammonium assimilation of Escherichia coli: dissection using an in silico replica. *FEBS Journal*, **2005**, 272, 1965-85	5.7	53
330	Interactions between a new class of eukaryotic antimicrobial agents and isolated rat liver mitochondria. *Biochimica Et Biophysica Acta - Bioenergetics*, **1989**, 975, 361-9	4.6	53
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328	The sum of the control coefficients of all enzymes on the flux through a group-transfer pathway can be as high as two. *FEBS Journal*, **1993**, 212, 791-9		52
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326	Identification of Three Early Phases of Cell-Fate Determination during Osteogenic and Adipogenic Differentiation by Transcription Factor Dynamics. *Stem Cell Reports*, **2017**, 8, 947-960	8	50
325	Anthracyclines modulate multidrug resistance protein (MRP) mediated organic anion transport. *Biochimica Et Biophysica Acta - Biomembranes*, **1997**, 1326, 12-22	3.8	50

324	Increased glucose metabolism and ATP level in brain tissue of Huntington's disease transgenic mice. *FEBS Journal*, **2008**, 275, 4740-55	5.7	49
323	Novel nirK cluster genes in Nitrosomonas europaea are required for NirK-dependent tolerance to nitrite. *Journal of Bacteriology*, **2005**, 187, 6849-51	3.5	49
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321	Why in vivo may not equal in vitro - new effectors revealed by measurement of enzymatic activities under the same in vivo-like assay conditions. *FEBS Journal*, **2012**, 279, 4145-59	5.7	48
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319	Synchronization of glycolytic oscillations in a yeast cell population. *Faraday Discussions*, **2001**, 261-76; discussion 325-51	3.6	48
318	Control analysis of glycolytic oscillations. *Biophysical Chemistry*, **1996**, 62, 15-24	3.5	48
317	Geobacteraceae community composition is related to hydrochemistry and biodegradation in an iron-reducing aquifer polluted by a neighboring landfill. *Applied and Environmental Microbiology*, **2005**, 71, 5983-91	4.8	47
316	The relative importance of passive and P-glycoprotein mediated anthracycline efflux from multidrug-resistant cells. *FEBS Journal*, **2000**, 267, 649-57		46
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314	Temperature compensation through systems biology. *FEBS Journal*, **2007**, 274, 940-50	5.7	45
313	Frequency-dependent incidence in models of sexually transmitted diseases: portrayal of pair-based transmission and effects of illness on contact behaviour. *Proceedings of the Royal Society B: Biological Sciences*, **2004**, 271, 625-34	4.4	45
312	Modular kinetic analysis of the adenine nucleotide translocator-mediated effects of palmitoyl-CoA on the oxidative phosphorylation in isolated rat liver mitochondria. *Diabetes*, **2005**, 54, 944-51	0.9	45
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306	Metabolic control of mitochondrial properties by adenine nucleotide translocator determines palmitoyl-CoA effects. Implications for a mechanism linking obesity and type 2 diabetes. *FEBS Journal*, **2006**, 273, 5288-302	5.7	42
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303	Enzyme organization and the direction of metabolic flow: physicochemical considerations. *Current Topics in Cellular Regulation*, **1992**, 33, 361-90		42
302	Modular response analysis of cellular regulatory networks. *Journal of Theoretical Biology*, **2002**, 218, 507-20	2.3	42
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300	Magainin oligomers reversibly dissipate delta microH+ in cytochrome oxidase liposomes. *Biochemistry*, **1994**, 33, 4562-70	3.2	41
299	A domino effect in drug action: from metabolic assault towards parasite differentiation. *Molecular Microbiology*, **2011**, 79, 94-108	4.1	40
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296	Calcium indirectly increases the control exerted by the adenine nucleotide translocator over 2-oxoglutarate oxidation in rat heart mitochondria. *Archives of Biochemistry and Biophysics*, **1995**, 324, 130-4	4.1	39
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294	A metabolic core model elucidates how enhanced utilization of glucose and glutamine, with enhanced glutamine-dependent lactate production, promotes cancer cell growth: The WarburQ effect. *PLoS Computational Biology*, **2017**, 13, e1005758	5	38
293	Functioning of oxidative phosphorylation in liver mitochondria of high-fat diet fed rats. *Biochimica Et Biophysica Acta - Molecular Basis of Disease*, **2007**, 1772, 307-16	6.9	38
292	Regulation of expression of terminal oxidases in Paracoccus denitrificans. *FEBS Journal*, **2001**, 268, 2486-97		38
291	Restriction point control of the mammalian cell cycle via the cyclin E/Cdk2:p27 complex. *FEBS Journal*, **2010**, 277, 357-67	5.7	37
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275	Glucose and the ATP paradox in yeast. *Biochemical Journal*, **2000**, 352, 593-599	3.8	34
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