David A Fell

List of Publications by Year
in descending order

137 papers	9,326 citations	76031 42 h-index	46524 93 g-index
143 all docs	143 docs citations	143 times ranked	7575 citing authors

#	Article	IF	Citations
1	A general definition of metabolic pathways useful for systematic organization and analysis of complex metabolic networks. Nature Biotechnology, 2000, 18, 326-332.	9.4	860
2	The small world inside large metabolic networks. Proceedings of the Royal Society B: Biological Sciences, 2001, 268, 1803-1810.	1.2	798
3	Metabolic control analysis: a survey of its theoretical and experimental development. Biochemical Journal, 1992, 286, 313-330.	1.7	761
4	Detection of elementary flux modes in biochemical networks: a promising tool for pathway analysis and metabolic engineering. Trends in Biotechnology, 1999, 17, 53-60.	4.9	609
5	The control of flux. Biochemical Society Transactions, 1995, 23, 341-366.	1.6	367
6	The small world of metabolism. Nature Biotechnology, 2000, 18, 1121-1122.	9.4	367
7	Metabolic pathways in the post-genome era. Trends in Biochemical Sciences, 2003, 28, 250-258.	3.7	347
8	Metabolic control and its analysis. Additional relationships between elasticities and control coefficients. FEBS Journal, 1985, 148, 555-561.	0.2	273
9	A Genome-Scale Metabolic Model of Arabidopsis and Some of Its Properties Â Â. Plant Physiology, 2009, 151, 1570-1581.	2.3	273
10	Flux control of sulphate assimilation inArabidopsis thaliana: adenosine 5â€²-phosphosulphate reductase is more susceptible than ATP sulphurylase to negative control by thiols. Plant Journal, 2002, 31, 729-740.	2.8	252
11	Physiological control of metabolic flux: the requirement for multisite modulation. Biochemical Journal, 1995, 311, 35-39.	1.7	213
12	Differential feedback regulation of the MAPK cascade underlies the quantitative differences in EGF and NGF signalling in PC12 cells. FEBS Letters, 2000, 482, 169-174.	1.3	210
13	Reaction routes in biochemical reaction systems: Algebraic properties, validated calculation procedure and example from nucleotide metabolism. Journal of Mathematical Biology, 2002, 45, 153-181.	0.8	204
14	Is maximization of molar yield in metabolic networks favoured by evolution?. Journal of Theoretical Biology, 2008, 252, 497-504.	0.8	181
15	A Diel Flux Balance Model Captures Interactions between Light and Dark Metabolism during Day-Night Cycles in C3 and Crassulacean Acid Metabolism Leaves Â Â Â. Plant Physiology, 2014, 165, 917-929.	2.3	181
16	Modelling photosynthesis and its control. Journal of Experimental Botany, 2000, 51, 319-328.	2.4	150
17	A Genome-Scale Metabolic Model Accurately Predicts Fluxes in Central Carbon Metabolism under Stress Conditions Â Â. Plant Physiology, 2010, 154, 311-323.	2.3	124
18	A method for accounting for maintenance costs in flux balance analysis improves the prediction of plant cell metabolic phenotypes under stress conditions. Plant Journal, 2013, 75, 1050-1061.	2.8	121

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19	Responses to Light Intensity in a Genome-Scale Model of Rice Metabolism Â Â Â. Plant Physiology, 2013, 162, 1060-1072.	2.3	117
20	Increasing the flux in metabolic pathways: A metabolic control analysis perspective. , 1998, 58, 121-124.		116
21	Metabolic pathway analysis of a recombinant yeast for rational strain development. Biotechnology and Bioengineering, 2002, 79, 121-134.	1.7	109
22	Metabolic control and its analysis. Extensions to the theory and matrix method. FEBS Journal, 1987, 165, 215-221.	0.2	108
23	Control analysis of mammalian serine biosynthesis. Feedback inhibition on the final step. Biochemical Journal, 1988, 256, 97-101.	1.7	93
24	Detection of stoichiometric inconsistencies in biomolecular models. Bioinformatics, 2008, 24, 2245-2251.	1.8	85
25	Getting to grips with the plant metabolic network. Biochemical Journal, 2008, 409, 27-41.	1.7	84
26	Enzymes, metabolites and fluxes. Journal of Experimental Botany, 2004, 56, 267-272.	2.4	76
27	Metabolic Control Analysis of glycolysis in tuber tissue of potato (Solanum tuberosum): explanation for the low control coefficient of phosphofructokinase over respiratory flux. Biochemical Journal, 1997, 322, 119-127.	1.7	75
28	An integrated study of threonine-pathway enzyme kinetics in Escherichia coli. Biochemical Journal, 2001, 356, 415-423.	1.7	73
29	Model-assisted metabolic engineering of Escherichia coli for long chain alkane and alcohol production. Metabolic Engineering, 2018, 46, 1-12.	3.6	65
30	The role of multiple enzyme activation in metabolic flux control. Advances in Enzyme Regulation, 1998, 38, 65-85.	2.9	62
31	A control analysis exploration of the role of ATP utilisation in glycolytic-flux control and glycolytic-metabolite-concentration regulation. FEBS Journal, 1998, 258, 956-967.	0.2	61
32	RELEVANT CYCLES IN CHEMICAL REACTION NETWORKS. International Journal of Modeling, Simulation, and Scientific Computing, 2001, 04, 207-226.	0.9	61
33	A method for the determination of flux in elementary modes, and its application toLactobacillus rhamnosus. Biotechnology and Bioengineering, 2004, 88, 601-612.	1.7	61
34	Challenges to be faced in the reconstruction of metabolic networks from public databases. IET Systems Biology, 2006, 153, 379.	2.0	61
35	Elementary modes analysis of photosynthate metabolism in the chloroplast stroma. FEBS Journal, 2003, 270, 430-439.	0.2	59
36	Effects of a beetroot juice with high neobetanin content on the early-phase insulin response in healthy volunteers. Journal of Nutritional Science, 2014, 3, e9.	0.7	57

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37	Control of the threonine-synthesis pathway in Escherichia coli: a theoretical and experimental approach. Biochemical Journal, 2001, 356, 433-444.	1.7	55
38	Biotechnological potential of respiring Zymomonas mobilis: A stoichiometric analysis of its central metabolism. Journal of Biotechnology, 2013, 165, 1-10.	1.9	55
39	Applications of metabolic modelling to plant metabolism. Journal of Experimental Botany, 2004, 55, 1177-1186.	2.4	54
40	Computer modelling and experimental evidence for two steady states in the photosynthetic Calvin cycle. FEBS Journal, 2001, 268, 2810-2816.	0.2	49
41	Beyond genomics. Trends in Genetics, 2001, 17, 680-682.	2.9	49
42	The matrix method of metabolic control analysis: its validity for complex pathway structures. Journal of Theoretical Biology, 1989, 136, 181-197.	0.8	47
43	Metabolic control analysis of mammalian serine metabolism. Advances in Enzyme Regulation, 1990, 30, 13-32.	2.9	45
44	Identification of potential drug targets in Salmonella enterica sv. Typhimurium using metabolic modelling and experimental validation. Microbiology (United Kingdom), 2014, 160, 1252-1266.	0.7	45
45	An integrated study of threonine-pathway enzyme kinetics in Escherichia coli. Biochemical Journal, 2001, 356, 415.	1.7	44
46	SCAMP: A metabolic simulator and control analysis program. Mathematical and Computer Modelling, 1991, 15, 15-28.	2.0	43
47	Design of Metabolic Control for Large Flux Changes. Journal of Theoretical Biology, 1996, 182, 285-298.	0.8	43
48	Finite change analysis of glycolytic intermediates in tuber tissue of lines of transgenic potato (Solanum tuberosum) overexpressing phosphofructokinase. Biochemical Journal, 1997, 322, 111-117.	1.7	43
49	Metabolic control analysis. The effects of high enzyme concentrations. FEBS Journal, 1990, 192, 183-187.	0.2	41
50	Theoretical analyses of the functioning of the high- and low-Km cyclic nucleotide phosphodiesterases in the regulation of the concentration of adenosine 3â€²,5â€²-cyclic monophosphate in animal cells. Journal of Theoretical Biology, 1980, 84, 361-385.	0.8	40
51	Covalent modification and metabolic control analysis. Modification to the theorems and their application to metabolic systems containing covalently modifiable enzymes. FEBS Journal, 1990, 191, 405-411.	0.2	38
52	Regulation of Glycolytic Flux in Ischemic Preconditioning. Journal of Biological Chemistry, 2002, 277, 24411-24419.	1.6	38
53	Model-based biotechnological potential analysis of <i>Kluyveromyces marxianus</i> central metabolism. Journal of Industrial Microbiology and Biotechnology, 2017, 44, 1177-1190.	1.4	38
54	Control of the threonine-synthesis pathway in Escherichia coli: a theoretical and experimental approach. Biochemical Journal, 2001, 356, 433.	1.7	38

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55	Using a mammalian cell cycle simulation to interpret differential kinase inhibition in anti-tumour pharmaceutical development. BioSystems, 2006, 83, 91-97.	0.9	37
56	Can sugars be produced from fatty acids? A test case for pathway analysis tools. Bioinformatics, 2008, 24, 2615-2621.	1.8	36
57	Can sugars be produced from fatty acids? A test case for pathway analysis tools. Bioinformatics, 2009, 25, 152-158.	1.8	36
58	Kinetic modelling of the Zymomonas mobilis Entnerâ€"Doudoroff pathway: insights into control and functionality. Microbiology (United Kingdom), 2013, 159, 2674-2689.	0.7	36
59	Modular decomposition of metabolic systems via null-space analysis. Journal of Theoretical Biology, 2007, 249, 691-705.	0.8	34
60	Modeling of Zymomonas mobilis central metabolism for novel metabolic engineering strategies. Frontiers in Microbiology, 2014, 5, 42.	1.5	32
61	Building and analysing genome-scale metabolic models. Biochemical Society Transactions, 2010, 38, 1197-1201.	1.6	30
62	Modelling metabolism of the diatom <i>Phaeodactylum tricornutum</i>. Biochemical Society Transactions, 2015, 43, 1182-1186.	1.6	30
63	Protein phosphorylation can regulate metabolite concentrations rather than control flux: The example of glycogen synthase. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 1485-1490.	3.3	27
64	SysBioMed report: Advancing systems biology for medical applications. IET Systems Biology, 2009, 3, 131-136.	0.8	27
65	A Genome Scale Model of Geobacillus thermoglucosidasius (C56-YS93) reveals its biotechnological potential on rice straw hydrolysate. Journal of Biotechnology, 2017, 251, 30-37.	1.9	25
66	Threonine synthesis from aspartate in Escherichia coli cell-free extracts: pathway dynamics. Biochemical Journal, 2001, 356, 425-432.	1.7	23
67	Contribution of NADH Increases to Ethanolâ€™s Inhibition of Retinol Oxidation by Human ADH Isoforms. Alcoholism: Clinical and Experimental Research, 2009, 33, 571-580.	1.4	20
68	Genomeâ€scale model of <i>C. autoethanogenum</i> reveals optimal bioprocess conditions for highâ€value chemical production from carbon monoxide. Engineering Biology, 2019, 3, 32-40.	0.8	19
69	Metabolic control analysis. Sensitivity of control coefficients to elasticities. FEBS Journal, 1990, 191, 413-420.	0.2	17
70	Increase in lysophosphatidate acyltransferase activity in oilseed rape (<i>Brassica napus</i>) increases seed triacylglycerol content despite its low intrinsic flux control coefficient. New Phytologist, 2019, 224, 700-711.	3.5	17
71	Metabolic Control Analysis: Sensitivity of Control Coefficients to Experimentally Determined Variables. Journal of Theoretical Biology, 1994, 167, 175-200.	0.8	16
72	Stoichiometric analysis of the energetics and metabolic impact of photorespiration in C3 plants. Plant Journal, 2018, 96, 1228-1241.	2.8	16

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73	A computer program for the algebraic determination of control coefficients in Metabolic Control Analysis. Biochemical Journal, 1993, 292, 351-360.	1.7	15
74	Metabolic Control Analysis. , 0, , 69-80.		15
75	Distribution control of metabolic flux. Cell Biochemistry and Function, 1996, 14, 229-236.	1.4	14
76	Metabolic control analysis of anaerobic glycolysis in human hibernating myocardium replaces traditional concepts of flux control. FEBS Letters, 2002, 517, 245-250.	1.3	14
77	Threonine synthesis from aspartate in Escherichia coli cell-free extracts: pathway dynamics. Biochemical Journal, 2001, 356, 425.	1.7	13
78	Evidence for the activity of immobilised monomers of triose phosphate isomerase. Biochemical and Biophysical Research Communications, 1975, 67, 1013-1018.	1.0	12
79	Signal transduction and the control of expression of enzyme activity. Advances in Enzyme Regulation, 2000, 40, 35-46.	2.9	12
80	Dynamic simulation of pollutant effects on the threonine pathway in Escherichia coli. Comptes Rendus - Biologies, 2003, 326, 501-508.	0.1	12
81	Boosting Biomass Quantity and Quality by Improved Mixotrophic Culture of the Diatom Phaeodactylum tricornutum. Frontiers in Plant Science, 2021, 12, 642199.	1.7	12
82	Modeling and Simulating Metabolic Networks. , 0, , 755-805.		11
83	Myocardial energy metabolism in ischemic preconditioning and cardioplegia: A metabolic control analysis. Molecular and Cellular Biochemistry, 2005, 278, 223-232.	1.4	10
84	Metabolic trade-offs between biomass synthesis and photosynthate export at different light intensities in a genomeÃ¢â,¬â€œscale metabolic model of rice. Frontiers in Plant Science, 2014, 5, 656.	1.7	10
85	A genome-scale metabolic model of Cupriavidus necator H16 integrated with TraDIS and transcriptomic data reveals metabolic insights for biotechnological applications. PLoS Computational Biology, 2022, 18, e1010106.	1.5	10
86	Phosphofructokinase and glycolytic flux. Trends in Biochemical Sciences, 1984, 9, 515-516.	3.7	9
87	Overexpression of phospholipid: diacylglycerol acyltransferase in <i>Brassica napus</i> results in changes in lipid metabolism and oil accumulation. Biochemical Journal, 2022, 479, 805-823.	1.7	9
88	Computer simulations of the rate of change of concentration of adenosine 3â€²:5â€²-cyclic monophosphate after stimulation of adenylate cyclase activity. Biochemical Society Transactions, 1980, 8, 139-140.	1.6	8
89	Comparison of the applicability of several allosteric models to the pH and 2,3-bis(phospho)glycerate dependence of oxygen binding by human blood. Journal of Molecular Biology, 1982, 156, 863-889.	2.0	8
90	Response to comment on 'Can sugars be produced from fatty acids? A test case for pathway analysis tools'. Bioinformatics, 2009, 25, 3330-3331.	1.8	7

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91	Non-equilibrium/equilibrium reactions: which controls?. Biochemical Society Transactions, 1986, 14, 624-625.	1.6	6
92	The role of co-operativity in metabolism. Biochemical Society Transactions, 1987, 15, 234-235.	1.6	6
93	The preparation and properties of pyruvate kinase from yeast. Biochemical Journal, 1974, 139, 665-675.	1.7	5
94	Physiological significance of metabolite channelling. Journal of Theoretical Biology, 1991, 152, 109-110.	0.8	5
95	Theoretical Studies of the Control of Adenosine 3â€²:5â€²-Cyclic Monophosphate by the High- and Low-<i>K</i>m Phosphodiesterases. Biochemical Society Transactions, 1979, 7, 1039-1040.	1.6	4
96	Theoretical aspects of covalent modification in metabolic control. Biochemical Society Transactions, 1986, 14, 623-624.	1.6	4
97	Simulation of dioxygen free radical reactions. Biochemical Society Transactions, 1993, 21, 256S-256S.	1.6	4
98	Evolution of Central Carbon Metabolism. Molecular Cell, 2010, 39, 663-664.	4.5	4
99	Recent Developments in Metabolic Pathway Analysis and Their Potential Implications for Biotechnology and Medicine. , 2000, , 57-66.		4
100	Proton-Relaxation-Enhancement Studies on the Binding to Yeast Pyruvate Kinase of a Substrate and Effectors. FEBS Journal, 1972, 29, 128-133.	0.2	3
101	Computer simulation studies of the mixing technique and nonlinear optimizations used in the analysis of oxyhemoglobin dissociation. Mathematical Biosciences, 1979, 46, 59-69.	0.9	3
102	Substrate cycles: do they really cause amplification?. Biochemical Society Transactions, 1985, 13, 762-763.	1.6	3
103	The analysis of flux in substrate cycles. Biochemical Society Transactions, 1993, 21, 257S-257S.	1.6	3
104	How can we understand metabolism?. , 2007, , 87-101.		3
105	The Analysis of Flux in Substrate Cycles. , 1993, , 97-101.		3
106	Henrik Kacser, 1918â€"1995. Trends in Biochemical Sciences, 1995, 20, 297-298.	3.7	2
107	Dr Henrik Kacser (1918â€"1995). Journal of Theoretical Biology, 1996, 182, 193-194.	0.8	2
108	Phosphorylation of Allosteric Enzymes Can Serve Homeostasis rather than Control Flux: The Example of Glycogen Synthase. , 2005, , 59-71.		2

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109	METABOLIC NETWORKS. Complex Systems and Interdisciplinary Science, 2007, , 163-197.	0.2	2
110	Increasing the flux in metabolic pathways: A metabolic control analysis perspective. , 1998, 58, 121.		2
111	Increasing the flux in a metabolic pathway: a metabolic control analysis perspective. , 1999, , 257-273.		2
112	Evidence that the Monomers of Dimeric Triose Phosphate Isomerase are Active. Biochemical Society Transactions, 1976, 4, 620-622.	1.6	1
113	A program for the analysis of students' enzyme kinetics results with diagnosis of experimental inadequacies. Biochemical Society Transactions, 1986, 14, 466-466.	1.6	1
114	Teaching the TCA cycle. Biochemical Education, 1986, 14, 173-174.	0.1	1
115	Responses of metabolic systems: application of control analysis to yeast glycolysis. Biochemical Society Transactions, 1987, 15, 238-238.	1.6	1
116	A sensitivity issue. Trends in Biochemical Sciences, 1987, 12, 217-218.	3.7	1
117	MetaCon - A Computer Program for the Algebraic Evaluation of Control Coefficients of Metabolic Networks. , 1993, , 473-478.		1
118	Dependence of Control Coefficient Distribution on the Boundaries of a Metabolic System: A Generalized Analysis of the Effects of Additional Input and Output reactions to a Linear Pathway. Journal of Theoretical Biology, 2002, 215, 239-251.	0.8	1
119	Abstract 4933: Modeling the sequence-sensitive gemcitabine/docetaxel combination using the Virtual Tumor. , 2011, , .		1
120	Exercising Control When Control is Distributed. , 2000, , 267-274.		1
121	Control Coefficients and the Matrix Method. , 1990, , 139-148.		1
122	A Correction to Weber's Description of Ligand Binding by Allosteric Proteins. Biochemical Society Transactions, 1978, 6, 1264-1266.	1.6	0
123	Subunit Interactions and Catalytic Activity of Triose Phosphate Isomerase. Enzyme, 1982, 28, 287-293.	0.7	0
124	Microcomputer-controlled collection of haemoglobinâ€"oxygen binding curves. Biochemical Society Transactions, 1984, 12, 1094-1095.	1.6	0
125	Error and bias in control coefficients calculated from elasticities. Biochemical Society Transactions, 1995, 23, 294S-294S.	1.6	0
126	Design of experiments to measure elasticity coefficients. Biochemical Society Transactions, 1995, 23, 297S-297S.	1.6	0

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127	Simulation of free radical reactions: a multi-compartment Monte Carlo approach. Biochemical Society Transactions, 1995, 23, 298S-298S.	1.6	0
128	Reply from E-D. Schulze. Trends in Ecology and Evolution, 1995, 10, 245.	4.2	0
129	Simulation of The Epidermal Growth Factor Signal Transduction Pathway. Biochemical Society Transactions, 1999, 27, A48-A48.	1.6	0
130	Traditional concepts of metabolic control mislead more than enlighten. Biochemical Society Transactions, 1999, 27, A20-A20.	1.6	0
131	Computer simulation and evolution strategies in the study of rat heart glucose metabolism. Biochemical Society Transactions, 1999, 27, A48-A48.	1.6	0
132	Metabolic Control Analysis for the NMR Spectroscopist. , 2005, , 31-44.		0
133	Genotype to phenotype mapping still needs underpinning by research in metabolism and enzymology. Bioscience Reports, 2018, 38, .	1.1	0
134	Multisite Modulation in the Control of Glycolysis. , 2000, , 259-266.		0
135	Abstract A35: Computer modeling of nocodazole exposure on cell culturesin vitro. , 2009, , .		0
136	Systems Biology Approaches to Cancer Drug Development. , 2011, , 367-380.		0
137	Abstract 4942: Can three-dimensional cell cultures be used to predict in vivo drug response and synergistic combinations. , 2012, , .		0