

Athel Cornish-bowden

List of Publications by Year in descending order

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131
papers

8,854
citations

60835

43
h-index

44509

91
g-index

166
all docs

166
docs citations

166
times ranked

6736
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | The direct linear plot. A new graphical procedure for estimating enzyme kinetic parameters. <i>Biochemical Journal</i> , 1974, 139, 715-720. | 3.8 | 1,530 |
| 2 | A simple graphical method for determining the inhibition constants of mixed, uncompetitive and non-competitive inhibitors (Short Communication). <i>Biochemical Journal</i> , 1974, 137, 143-144. | 3.8 | 872 |
| 3 | Nomenclature for incompletely specified bases in nucleic acid sequences: recommendations 1984. <i>Nucleic Acids Research</i> , 1985, 13, 3021-3030. | 14.0 | 459 |
| 4 | Statistical considerations in the estimation of enzyme kinetic parameters by the direct linear plot and other methods. <i>Biochemical Journal</i> , 1974, 139, 721-730. | 3.8 | 374 |
| 5 | Evolution and regulatory role of the hexokinases. <i>Biochimica Et Biophysica Acta - Molecular Cell Research</i> , 1998, 1401, 242-264. | 4.1 | 264 |
| 6 | Enthalpy-entropy compensation: a phantom phenomenon. <i>Journal of Biosciences</i> , 2002, 27, 121-126. | 1.8 | 220 |
| 7 | Diagnostic uses of the Hill (logit and Nernst) plots. <i>Journal of Molecular Biology</i> , 1975, 95, 201-212. | 4.3 | 198 |
| 8 | Estimation of Michaelis constant and maximum velocity from the direct linear plot. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 1978, 523, 268-272. | 2.7 | 178 |
| 9 | Relationships between inhibition constants, inhibitor concentrations for 50% inhibition and types of inhibition: new ways of analysing data. <i>Biochemical Journal</i> , 2001, 357, 263-268. | 3.8 | 152 |
| 10 | [9] Relating proteins by amino acid composition. <i>Methods in Enzymology</i> , 1983, 91, 60-75. | 1.7 | 151 |
| 11 | The kinetics of coupled enzyme reactions. Applications to the assay of glucokinase, with glucose 6-phosphate dehydrogenase as coupling enzyme. <i>Biochemical Journal</i> , 1974, 141, 205-209. | 3.8 | 147 |
| 12 | One hundred years of Michaelis-Menten kinetics. <i>Perspectives in Science</i> , 2015, 4, 3-9. | 0.6 | 129 |
| 13 | Organizational invariance and metabolic closure: Analysis in terms of systems. <i>Journal of Theoretical Biology</i> , 2006, 238, 949-961. | 1.7 | 121 |
| 14 | Understanding the regulation of aspartate metabolism using a model based on measured kinetic parameters. <i>Molecular Systems Biology</i> , 2009, 5, 271. | 7.5 | 107 |
| 15 | A weak link in metabolism: the metabolic capacity for glycine biosynthesis does not satisfy the need for collagen synthesis. <i>Journal of Biosciences</i> , 2009, 34, 853-872. | 1.8 | 107 |
| 16 | The effect of natural selection on enzymic catalysis. <i>Journal of Molecular Biology</i> , 1976, 101, 1-9. | 4.3 | 95 |
| 17 | Co-operativity in monomeric enzymes. <i>Journal of Theoretical Biology</i> , 1987, 124, 1-23. | 1.7 | 86 |
| 18 | Assessment of protein sequence identity from amino acid composition data. <i>Journal of Theoretical Biology</i> , 1977, 65, 735-742. | 1.7 | 82 |

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|----|---|------|-----------|
| 19 | Evaluation of distribution-free confidence limits for enzyme kinetic parameters. <i>Journal of Theoretical Biology</i> , 1978, 74, 163-175. | 1.7 | 82 |
| 20 | Relationships between inhibition constants, inhibitor concentrations for 50% inhibition and types of inhibition: new ways of analysing data. <i>Biochemical Journal</i> , 2001, 357, 263. | 3.8 | 80 |
| 21 | Current IUBMB recommendations on enzyme nomenclature and kinetics. <i>Perspectives in Science</i> , 2014, 1, 74-87. | 0.6 | 79 |
| 22 | From L'Homme Machine to metabolic closure: Steps towards understanding life. <i>Journal of Theoretical Biology</i> , 2011, 286, 100-113. | 1.7 | 72 |
| 23 | Critical values for testing the significance of amino acid composition indexes. <i>Analytical Biochemistry</i> , 1980, 105, 233-238. | 2.5 | 71 |
| 24 | Standards for Reporting Enzyme Data: The STREND Consortium: What it aims to do and why it should be helpful. <i>Perspectives in Science</i> , 2014, 1, 131-137. | 0.6 | 71 |
| 25 | How reliably do amino acid composition comparisons predict sequence similarities between proteins?. <i>Journal of Theoretical Biology</i> , 1979, 76, 369-386. | 1.7 | 69 |
| 26 | Prospects for Antiparasitic Drugs. <i>Journal of Biological Chemistry</i> , 1998, 273, 5500-5505. | 3.5 | 66 |
| 27 | Beyond reductionism: Metabolic circularity as a guiding vision for a real biology of systems. <i>Proteomics</i> , 2007, 7, 839-845. | 3.0 | 63 |
| 28 | Recommendations for terminology and databases for biochemical thermodynamics. <i>Biophysical Chemistry</i> , 2011, 155, 89-103. | 2.9 | 58 |
| 29 | Contrasting theories of life: Historical context, current theories. In search of an ideal theory. <i>BioSystems</i> , 2020, 188, 104063. | 2.0 | 53 |
| 30 | A Simple Self-Maintaining Metabolic System: Robustness, Autocatalysis, Bistability. <i>PLoS Computational Biology</i> , 2010, 6, e1000872. | 3.1 | 53 |
| 31 | From genome to cellular phenotype—a role for metabolic flux analysis?. <i>Nature Biotechnology</i> , 2000, 18, 267-268. | 20.8 | 52 |
| 32 | The Influence of Binding Domains on the Nature of Subunit Interactions in Oligomeric Proteins. <i>Journal of Biological Chemistry</i> , 1970, 245, 6241-6250. | 3.5 | 52 |
| 33 | Co-response Analysis: A New Experimental Strategy for Metabolic Control Analysis. <i>Journal of Theoretical Biology</i> , 1996, 182, 371-380. | 1.7 | 51 |
| 34 | Closure to efficient causation, computability and artificial life. <i>Journal of Theoretical Biology</i> , 2010, 263, 79-92. | 1.7 | 50 |
| 35 | Isotope-exchange evidence for an ordered mechanism for rat-liver glucokinase, a monomeric cooperative enzyme. <i>Biochemistry</i> , 1981, 20, 499-506. | 2.6 | 47 |
| 36 | Understanding the parts in terms of the whole. <i>Biology of the Cell</i> , 2004, 96, 713-717. | 2.0 | 43 |

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 37 | Putting the Systems Back into Systems Biology. <i>Perspectives in Biology and Medicine</i> , 2006, 49, 475-489. | 0.5 | 42 |
| 38 | Life before LUCA. <i>Journal of Theoretical Biology</i> , 2017, 434, 68-74. | 1.7 | 42 |
| 39 | Kinetics of the hydrolysis of N-benzoyl-L-serine methyl ester catalysed by bromelain and by papain. Analysis of modifier mechanisms by lattice nomography, computational methods of parameter evaluation for substrate-activated catalyses and consequences of postulated non-productive binding in bromelain- and papain-catalysed hydrolyses. <i>Biochemical Journal</i> , 1974, 141, 365-381. | 3.8 | 41 |
| 40 | Self-organization at the origin of life. <i>Journal of Theoretical Biology</i> , 2008, 252, 411-418. | 1.7 | 40 |
| 41 | Detection of Errors of Interpretation in Experiments in Enzyme Kinetics. <i>Methods</i> , 2001, 24, 181-190. | 3.9 | 38 |
| 42 | Silent genes given voice. <i>Nature</i> , 2001, 409, 571-572. | 36.2 | 37 |
| 43 | Dominance is not Inevitable. <i>Journal of Theoretical Biology</i> , 1987, 125, 333-338. | 1.7 | 36 |
| 44 | Metabolic control theory and biochemical systems theory: Different objectives, different assumptions, different results. <i>Journal of Theoretical Biology</i> , 1989, 136, 365-377. | 1.7 | 34 |
| 45 | Specificity of Non-Michaelis-Menten Enzymes: Necessary Information for Analyzing Metabolic Pathways. <i>Journal of Physical Chemistry B</i> , 2010, 114, 16209-16213. | 2.7 | 34 |
| 46 | Mechanism of liver glucokinase. <i>Molecular and Cellular Biochemistry</i> , 1982, 44, 71-80. | 3.1 | 32 |
| 47 | The Role of Stoichiometric Analysis in Studies of Metabolism: An Example. <i>Journal of Theoretical Biology</i> , 2002, 216, 179-191. | 1.7 | 31 |
| 48 | Hexokinase and α -glucokinase in liver metabolism. <i>Trends in Biochemical Sciences</i> , 1991, 16, 281-282. | 7.5 | 29 |
| 49 | Enzyme specificity: Its meaning in the general case. <i>Journal of Theoretical Biology</i> , 1984, 108, 451-457. | 1.7 | 27 |
| 50 | Evolution of Negative Cooperativity in Glutathione Transferase Enabled Preservation of Enzyme Function. <i>Journal of Biological Chemistry</i> , 2016, 291, 26739-26749. | 3.5 | 27 |
| 51 | Metabolic Control Analysis in Theory and Practice. <i>Advances in Molecular and Cell Biology</i> , 1995, 11, 21-64. | 0.1 | 26 |
| 52 | The threat from creationism to the rational teaching of biology. <i>Biological Research</i> , 2007, 40, 113-22. | 3.6 | 26 |
| 53 | Organizational Invariance in (M, R) -Systems. <i>Chemistry and Biodiversity</i> , 2007, 4, 2396-2406. | 2.2 | 25 |
| 54 | Simulating a Model of Metabolic Closure. <i>Biological Theory</i> , 2013, 8, 383-390. | 1.5 | 24 |

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|----|--|------|-----------|
| 55 | Viability Conditions for a Compartmentalized Protometabolic System: A Semi-Empirical Approach. PLoS ONE, 2012, 7, e39480. | 2.5 | 23 |
| 56 | Analysis and interpretation of enzyme kinetic data. Perspectives in Science, 2014, 1, 121-125. | 0.6 | 23 |
| 57 | Interpretation of amino acid compositions. Trends in Biochemical Sciences, 1981, 6, 217-219. | 7.5 | 22 |
| 58 | Eukaryotic genes: Are introns structural elements or evolutionary debris?. Nature, 1985, 313, 434-435. | 36.2 | 22 |
| 59 | MetaModel: a program for modelling and control analysis of metabolic pathways on the IBM PC and compatibles. Bioinformatics, 1991, 7, 89-93. | 4.2 | 22 |
| 60 | The importance of uniformity in reporting protein-function data. Trends in Biochemical Sciences, 2005, 30, 11-12. | 7.5 | 22 |
| 61 | A large-scale protein-function database. Nature Chemical Biology, 2010, 6, 785-785. | 8.0 | 22 |
| 62 | The pH dependence of the apparent equilibrium constant, K^{app} , of a biochemical reaction. Trends in Biochemical Sciences, 1993, 18, 288-291. | 7.5 | 21 |
| 63 | Hidden Concepts in the History and Philosophy of Origins-of-Life Studies: a Workshop Report. Origins of Life and Evolution of Biospheres, 2019, 49, 111-145. | 2.0 | 21 |
| 64 | Complex networks of interactions connect genes to phenotypes. Trends in Biochemical Sciences, 2001, 26, 463-465. | 7.5 | 20 |
| 65 | Metabolic analysis in drug design. Comptes Rendus - Biologies, 2003, 326, 509-515. | 0.3 | 20 |
| 66 | Enthalpy-entropy compensation and the isokinetic temperature in enzyme catalysis. Journal of Biosciences, 2017, 42, 665-670. | 1.8 | 19 |
| 67 | Interpretation of the difference index as a guide to protein sequence identity. Journal of Theoretical Biology, 1978, 74, 155-161. | 1.7 | 16 |
| 68 | Rosennean Complexity and its relevance to ecology. Ecological Complexity, 2018, 35, 13-24. | 3.0 | 16 |
| 69 | Metabolic balance sheets. Nature, 2002, 420, 129-130. | 36.2 | 15 |
| 70 | Enzymes in context: Kinetic characterization of enzymes for systems biology. Biochemist, 2005, 27, 11-14. | 0.5 | 15 |
| 71 | The physiological significance of negative co-operativity. Journal of Theoretical Biology, 1975, 51, 233-235. | 1.7 | 14 |
| 72 | Metabolic efficiency: Is it a useful concept?. Biochemical Society Transactions, 1983, 11, 44-45. | 3.4 | 14 |

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|----|--|------|-----------|
| 73 | The physiological significance of negative cooperativity revisited. <i>Journal of Theoretical Biology</i> , 2013, 319, 144-147. | 1.7 | 14 |
| 74 | Evaluation of the non-randomness of protein compositions. <i>Journal of Molecular Evolution</i> , 1977, 10, 231-240. | 1.9 | 13 |
| 75 | Tibor Ganti and Robert Rosen: Contrasting approaches to the same problem. <i>Journal of Theoretical Biology</i> , 2015, 381, 6-10. | 1.7 | 13 |
| 76 | Size matters: Influence of stochasticity on the self-maintenance of a simple model of metabolic closure. <i>Journal of Theoretical Biology</i> , 2012, 300, 143-151. | 1.7 | 12 |
| 77 | Victor Henri: 111 years of his equation. <i>Biochimie</i> , 2014, 107, 161-166. | 2.9 | 12 |
| 78 | Extending Double Modulation: Combinatorial Rules for Identifying the Modulations Necessary for Determining Elasticities in Metabolic Pathways. <i>Journal of Theoretical Biology</i> , 1996, 182, 361-369. | 1.7 | 11 |
| 79 | Kinetics of Multi-Enzyme Systems. , 1995, , 121-136. | | 11 |
| 80 | Related genes can have unrelated introns. <i>Nature</i> , 1982, 297, 625-626. | 36.2 | 10 |
| 81 | Effect of glycerol on glucokinase activity: Loss of cooperative behavior with respect to glucose. <i>Archives of Biochemistry and Biophysics</i> , 1985, 237, 328-334. | 3.2 | 10 |
| 82 | Generalization of the double-modulation method for in situ determination of elasticities. <i>Biochemical Journal</i> , 1997, 327, 217-223. | 3.8 | 10 |
| 83 | Synergy between verapamil and other multidrug-resistance modulators in model membranes. <i>Journal of Biosciences</i> , 2007, 32, 737-746. | 1.8 | 10 |
| 84 | Robust Estimation in Enzyme Kinetics. , 1981, , 105-119. | | 8 |
| 85 | The time dimension in steady-state kinetic: A simplified representation of control coefficients. <i>Biochemical Education</i> , 1987, 15, 144-146. | 0.2 | 8 |
| 86 | Lynn Margulis and the origin of the eukaryotes. <i>Journal of Theoretical Biology</i> , 2017, 434, 1. | 1.7 | 8 |
| 87 | Isotope-exchange evidence for allosteric regulation of hexokinase II by glucose 6-phosphate and for an obligatory addition of substrates. <i>Biochemical Society Transactions</i> , 1981, 9, 62-63. | 3.4 | 7 |
| 88 | Phenetic methods of classification use information that is disregarded by minimum-length methods. <i>Journal of Theoretical Biology</i> , 1983, 101, 317-319. | 1.7 | 7 |
| 89 | Measurement of flux ratios as a probe of enzyme mechanisms. <i>Trends in Biochemical Sciences</i> , 1981, 6, 149-150. | 7.5 | 6 |
| 90 | Convergent evolution of lysozyme sequences?. <i>Nature</i> , 1988, 332, 787-788. | 36.2 | 6 |

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|-----|---|------|-----------|
| 91 | Parameter estimating procedures for the Michaelis-Menten model: Reply to Tseng and Hsu. Journal of Theoretical Biology, 1991, 153, 437-440. | 1.7 | 6 |
| 92 | Biochemistry and evolutionary biology: Two disciplines that need each other. Journal of Biosciences, 2014, 39, 13-27. | 1.8 | 6 |
| 93 | The essence of life revisited: how theories can shed light on it. Theory in Biosciences, 2022, 141, 105-123. | 1.5 | 6 |
| 94 | Properties Needed for the Enzymes of an Interconvertible Cascade to Generate a Highly Sensitive Response. , 1990, , 195-207. | | 6 |
| 95 | Computer Simulation as A Tool for Studying Metabolism and Drug Design. , 2000, , 165-172. | | 6 |
| 96 | Biochemical Evolution. , 0, , . | | 6 |
| 97 | The Nature and Role of Theory in Metabolic Control. , 1990, , 31-40. | | 5 |
| 98 | How much effect on free metabolite concentrations does channelling have?. Journal of Theoretical Biology, 1991, 152, 39-40. | 1.7 | 4 |
| 99 | Enthalpyâ€“Entropy Compensation as Deduced from Measurements of Temperature Dependence. , 2012, , 33-43. | | 4 |
| 100 | Curbing the excesses of low demand. Nature, 2013, 500, 157-158. | 36.2 | 4 |
| 101 | Molecular biology: No introns in insect globin genes. Nature, 1984, 310, 724-724. | 36.2 | 3 |
| 102 | Enzyme kinetics calculations - The direct linear plot procedure. Journal of Chemical Education, 1984, 61, 527. | 2.4 | 3 |
| 103 | The definition of â€“peptidaseâ€™. Biochemical Journal, 1985, 231, 808-808. | 3.8 | 3 |
| 104 | Stoichiometric analysis in studies of metabolism. Biochemical Society Transactions, 2002, 30, 43-46. | 3.4 | 3 |
| 105 | Modulation of metabolite concentrations with no net effect on fluxes. Molecular Biology Reports, 2002, 29, 17-20. | 2.4 | 3 |
| 106 | Reinhart Heinrich (1946â€“2006): An annotated bibliography. Journal of Theoretical Biology, 2008, 252, 379-387. | 1.7 | 3 |
| 107 | Professor Robert A. Albertyâ€“A Legacy of Excellence. Journal of Physical Chemistry B, 2010, 114, 16045-16046. | 2.7 | 3 |
| 108 | Analytical Kinetic Modeling: A Practical Procedure. Methods in Molecular Biology, 2014, 1090, 261-280. | 0.0 | 3 |

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|-----|--|-----|-----------|
| 109 | Subunit interactions in pig-kidney fructose-1,6-bisphosphatase: Binding of substrate induces a second class of site with lowered affinity and catalytic activity. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2014, 1840, 1798-1807. | 2.5 | 3 |
| 110 | Quo Vadis, enzymology data? Introductory remarks. <i>Perspectives in Science</i> , 2014, 1, 1-6. | 0.6 | 3 |
| 111 | Rat-Liver Glucokinase as a Mnemonic Enzyme. , 1984, , 29-41. | | 3 |
| 112 | Kinetics of Multi-Enzyme Systems. , 2001, , 121-136. | | 3 |
| 113 | Unusual solvent isotope effects on the glucokinase reaction. <i>Biochemical Society Transactions</i> , 1982, 10, 451-452. | 3.4 | 2 |
| 114 | Why are enzymes so small? or why do biochemists ask "why are enzymes so big?"™. <i>Trends in Biochemical Sciences</i> , 1986, 11, 286. | 7.5 | 2 |
| 115 | Saturation functions as a nested set. <i>Journal of Theoretical Biology</i> , 1988, 130, 125-126. | 1.7 | 2 |
| 116 | Two centuries of catalysis. <i>Journal of Biosciences</i> , 1998, 23, 87-92. | 1.8 | 2 |
| 117 | Zacharias Dische and the discovery of feedback inhibition: A landmark paper published in the forerunner of <i>Biochimie</i> . <i>Biochimie</i> , 2021, 182, 120-130. | 2.9 | 2 |
| 118 | Nonequilibrium Isotope Exchange Methods for Investigating Enzyme Mechanisms. <i>Current Topics in Cellular Regulation</i> , 1989, 30, 143-169. | 0.0 | 2 |
| 119 | Amino Acid Compositions Provide a Reliable Guide to Sequence Similarities. <i>Biochemical Society Transactions</i> , 1978, 6, 767-768. | 3.4 | 1 |
| 120 | MECHANISTIC STUDIES OF RAT MUSCLE HEXOKINASE II. <i>Biochemical Society Transactions</i> , 1981, 9, 158P-158P. | 3.4 | 1 |
| 121 | The prediction of repetitive protein sequences from amino acid compositions: a comment. <i>Biochemical Journal</i> , 1984, 217, 340-340. | 3.8 | 1 |
| 122 | Significance of the purine-pyrimidine motif present in most gene groups. <i>Journal of Theoretical Biology</i> , 1988, 134, 1-7. | 1.7 | 1 |
| 123 | Cornish-Bowden and Cárdenas reply. <i>Trends in Biochemical Sciences</i> , 1992, 17, 59. | 7.5 | 1 |
| 124 | A Control Analysis of Metabolic Regulation. , 1993, , 193-198. | | 1 |
| 125 | Kinetic implications of metabolite channelling in β^2 -oxidation. <i>Biochemical Society Transactions</i> , 1994, 22, 451-454. | 3.4 | 1 |
| 126 | Reinhard Heinrich (1946-2006). <i>Journal of Theoretical Biology</i> , 2008, 252, 377-378. | 1.7 | 1 |

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|-----|---|-----|-----------|
| 127 | ROBUST ESTIMATION OF ENZYME KINETIC PARAMETERS. Biochemical Society Transactions, 1981, 9, 321P-321P. | 3.4 | 0 |
| 128 | Metabolic complexity has no bearing on genetic determinism. Behavioral and Brain Sciences, 1999, 22, 889-890. | 0.7 | 0 |
| 129 | Monitoring the energy status of a living organism in real time. Journal of Biosciences, 2008, 33, 629-630. | 1.8 | 0 |
| 130 | Time flies like an arrow: Fruit flies like a banana. Perspectives in Science, 2015, 6, 113-120. | 0.6 | 0 |
| 131 | Kinetics, Enzymes. , 0, , 1-14. | | 0 |