Richard Wolfenden

List of Publications by Year
in descending order

85 papers	8,411 citations	57631 44 h-index	56606 83 g-index
87 all docs	87 docs citations	87 times ranked	6422 citing authors

#	Article	IF	Citations
1	The Burden Borne by Protein Methyltransferases: Rates and Equilibria of Non-enzymatic Methylation of Amino Acid Side Chains by SAM in Water. Biochemistry, 2021, 60, 854-858.	1.2	2
2	Ether Hydrolysis, Ether Thiolysis, and the Catalytic Power of Etherases in the Disassembly of Lignin. Biochemistry, 2019, 58, 5381-5385.	1.2	3
3	Jan Hermans (1933â€2018): Redâ€blooded biophysicists study hemoglobin. Proteins: Structure, Function and Bioinformatics, 2019, 87, 171-173.	1.5	0
4	Sulfonium Ion Condensation: The Burden Borne by SAM Synthetase. Biochemistry, 2018, 57, 3549-3551.	1.2	7
5	Three Pyrimidine Decarboxylations in the Absence of a Catalyst. Biochemistry, 2017, 56, 1498-1503.	1.2	1
6	Cytosine deamination and the precipitous decline of spontaneous mutation during Earth's history. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8194-8199.	3.3	59
7	tRNA acceptor-stem and anticodon bases embed separate features of amino acid chemistry. RNA Biology, 2016, 13, 145-151.	1.5	32
8	Temperature dependence of amino acid hydrophobicities. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7484-7488.	3.3	68
9	tRNA acceptor stem and anticodon bases form independent codes related to protein folding. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7489-7494.	3.3	64
10	Primordial chemistry and enzyme evolution in a hot environment. Cellular and Molecular Life Sciences, 2014, 71, 2909-2915.	2.4	15
11	Massive Thermal Acceleration of the Emergence of Primordial Chemistry, the Incidence of Spontaneous Mutation, and the Evolution of Enzymes. Journal of Biological Chemistry, 2014, 289, 30198-30204.	1.6	22
12	The Nonenzymatic Decomposition of Guanidines and Amidines. Journal of the American Chemical Society, 2014, 136, 130-136.	6.6	29
13	Catalysis by Desolvation: The Catalytic Prowess of SAM-Dependent Halide-Alkylating Enzymes. Journal of the American Chemical Society, 2013, 135, 14473-14475.	6.6	23
14	Kinetic Mechanism of Human Histidine Triad Nucleotide Binding Protein 1. Biochemistry, 2013, 52, 3588-3600.	1.2	35
15	Hydrolysis of <i>N</i>-Alkyl Sulfamates and the Catalytic Efficiency of an Sâ€"N Cleaving Sulfamidase. Journal of Organic Chemistry, 2012, 77, 2907-2910.	1.7	2
16	Proton-in-Flight Mechanism for the Spontaneous Hydrolysis of N-Methyl O-Phenyl Sulfamate: Implications for the Design of Steroid Sulfatase Inhibitors. Journal of Organic Chemistry, 2012, 77, 4450-4453.	1.7	12
17	Catalytic Proficiency: The Extreme Case of Sâ€"O Cleaving Sulfatases. Journal of the American Chemical Society, 2012, 134, 525-531.	6.6	92
18	Amide Bonds to the Nitrogen Atoms of Cysteine and Serine as â€œWeak Pointsâ€•in the Backbones of Proteins. Biochemistry, 2011, 50, 7259-7264.	1.2	9

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19	Kinetic Challenges Facing Oxalate, Malonate, Acetoacetate, and Oxaloacetate Decarboxylases. Journal of the American Chemical Society, 2011, 133, 5683-5685.	6.6	36
20	The â€œNeutralâ€•Hydrolysis of Simple Carboxylic Esters in Water and the Rate Enhancements Produced by Acetylcholinesterase and Other Carboxylic Acid Esterases. Journal of the American Chemical Society, 2011, 133, 13821-13823.	6.6	24
21	Enhancement of the Rate of Pyrophosphate Hydrolysis by Nonenzymatic Catalysts and by Inorganic Pyrophosphatase. Journal of Biological Chemistry, 2011, 286, 18538-18546.	1.6	30
22	Benchmark Reaction Rates, the Stability of Biological Molecules in Water, and the Evolution of Catalytic Power in Enzymes. Annual Review of Biochemistry, 2011, 80, 645-667.	5.0	131
23	The rate of spontaneous cleavage of the glycosidic bond of adenosine. Bioorganic Chemistry, 2010, 38, 224-228.	2.0	16
24	Impact of temperature on the time required for the establishment of primordial biochemistry, and for the evolution of enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22102-22105.	3.3	49
25	The hydrolysis of phosphate diesters in cyclohexane and acetone. Chemical Communications, 2010, 46, 4306.	2.2	11
26	The Intrinsic Reactivity of ATP and the Catalytic Proficiencies of Kinases Acting on Glucose, N-Acetylgalactosamine, and Homoserine. Journal of Biological Chemistry, 2009, 284, 22747-22757.	1.6	58
27	Orotic Acid Decarboxylation in Water and Nonpolar Solvents: A Potential Role for Desolvation in the Action of OMP Decarboxylase. Biochemistry, 2009, 48, 8738-8745.	1.2	23
28	Rates of Spontaneous Cleavage of Glucose, Fructose, Sucrose, and Trehalose in Water, and the Catalytic Proficiencies of Invertase and Trehalas. Journal of the American Chemical Society, 2008, 130, 7548-7549.	6.6	54
29	Uroporphyrinogen decarboxylation as a benchmark for the catalytic proficiency of enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 17328-17333.	3.3	40
30	Monoalkyl sulfates as alkylating agents in water, alkylsulfatase rate enhancements, and the "energy-rich" nature of sulfate half-esters. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 83-86.	3.3	57
31	The Rate Enhancement Produced by the Ribosome:â€‰ An Improved Model. Biochemistry, 2007, 46, 4037-4044.	1.2	57
32	Experimental Measures of Amino Acid Hydrophobicity and the Topology of Transmembrane and Globular Proteins. Journal of General Physiology, 2007, 129, 357-362.	0.9	101
33	Rates of Spontaneous Disintegration of DNA and the Rate Enhancements Produced by DNA Glycosylases and Deaminases. Biochemistry, 2007, 46, 13638-13647.	1.2	47
34	Experimental Measures of Amino Acid Hydrophobicity and the Topology of Transmembrane and Globular Proteins. Journal of Cell Biology, 2007, 177, i10-i10.	2.3	2
35	Degrees of Difficulty of Water-Consuming Reactions in the Absence of Enzymes. Chemical Reviews, 2006, 106, 3379-3396.	23.0	181
36	Thermodynamic Analysis of Catalysis by the Dihydroorotases from Hamster and Bacillus caldolyticus, As Compared with the Uncatalyzed Reaction. Biochemistry, 2006, 45, 8275-8283.	1.2	9

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37	The time required for water attack at the phosphorus atom of simple phosphodiesters and of DNA. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 4052-4055.	3.3	234
38	The Burden Borne by Urease. Journal of the American Chemical Society, 2005, 127, 10828-10829.	6.6	138
39	The ribosome as an entropy trap. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7897-7901.	3.3	311
40	Fourier transform ion cyclotron resonance MS reveals the presence of a water molecule in an enzyme transition-state analogue complex. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 15341-15345.	3.3	18
41	The path to the transition state in enzyme reactions: a survey of catalytic efficiencies. Journal of Physical Organic Chemistry, 2004, 17, 586-591.	0.9	36
42	Charge Development in the Transition State for Decarboxylations in Water:Â Spontaneous and Acetone-Catalyzed Decarboxylation of Aminomalonate. Journal of the American Chemical Society, 2004, 126, 4514-4515.	6.6	16
43	Lithium-Catalyzed Hydroxide Attack at the Carbon Atom of Methyl Phosphate. Journal of the American Chemical Society, 2004, 126, 8646-8647.	6.6	7
44	Thermodynamic and extrathermodynamic requirements of enzyme catalysis. Biophysical Chemistry, 2003, 105, 559-572.	1.5	81
45	Migration of Methyl Groups between Aliphatic Amines in Water. Journal of the American Chemical Society, 2003, 125, 310-311.	6.6	41
46	The rate of hydrolysis of phosphomonoester dianions and the exceptional catalytic proficiencies of protein and inositol phosphatases. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 5607-5610.	3.3	245
47	Catalytic Proficiency: The Unusual Case of OMP Decarboxylase. Annual Review of Biochemistry, 2002, 71, 847-885.	5.0	266
48	15N Kinetic Isotope Effects on Uncatalyzed and Enzymatic Deamination of Cytidineâ€. Biochemistry, 2002, 41, 415-421.	1.2	36
49	Catalysis by Entropic Effects:Â The Action of Cytidine Deaminase on 5,6-Dihydrocytidineâ€. Biochemistry, 2002, 41, 3925-3930.	1.2	23
50	The Depth of Chemical Time and the Power of Enzymes as Catalysts. Accounts of Chemical Research, 2001, 34, 938-945.	7.6	819
51	Site-Bound Water and the Shortcomings of a Less than Perfect Transition State Analogueâ€. Biochemistry, 2001, 40, 11364-11371.	1.2	21
52	Role of Enzymeâ˜'Ribofuranosyl Contacts in the Ground State and Transition State for Orotidine 5â€˜-Phosphate Decarboxylase:Â A Role for Substrate Destabilization?â€. Biochemistry, 2001, 40, 6227-6232.	1.2	47
53	Temperature Effects on the Catalytic Efficiency, Rate Enhancement, and Transition State Affinity of Cytidine Deaminase, and the Thermodynamic Consequences for Catalysis of Removing a Substrate â€œAnchorâ€• Biochemistry, 2000, 39, 9746-9753.	1.2	107
54	Contribution of Enzymeâ˜'Phosphoribosyl Contacts to Catalysis by Orotidine 5â€˜-Phosphate Decarboxylaseâ€. Biochemistry, 2000, 39, 8113-8118.	1.2	82

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55	The Rate of Spontaneous Decarboxylation of Amino Acids. Journal of the American Chemical Society, 2000, 122, 11507-11508.	6.6	95
56	The Temperature Dependence of Enzyme Rate Enhancements. Journal of the American Chemical Society, 1999, 121, 7419-7420.	6.6	114
57	Cytidine Deaminases fromB. subtilisandE. coli:Â Compensating Effects of Changing Zinc Coordination and Quaternary Structureâ€. Biochemistry, 1999, 38, 12258-12265.	1.2	43
58	Effects of Substrate Binding Determinants in the Transition State for Orotidine 5â€²-Monophosphate Decarboxylase. Bioorganic Chemistry, 1998, 26, 283-288.	2.0	20
59	Substrate Connectivity Effects in the Transition State for Cytidine Deaminaseâ€. Biochemistry, 1998, 37, 11873-11878.	1.2	34
60	Spontaneous Hydrolysis of Glycosides. Journal of the American Chemical Society, 1998, 120, 6814-6815.	6.6	238
61	Spontaneous Hydrolysis of Ionized Phosphate Monoesters and Diesters and the Proficiencies of Phosphatases and Phosphodiesterases as Catalysts. Journal of the American Chemical Society, 1998, 120, 833-834.	6.6	131
62	Mandelate Racemase in Pieces:Â Effective Concentrations of Enzyme Functional Groups in the Transition Stateâ€. Biochemistry, 1997, 36, 1646-1656.	1.2	70
63	The Structure of the Cytidine Deaminaseâ^'Product Complex Provides Evidence for Efficient Proton Transfer and Ground-State Destabilizationâ€,â€¡. Biochemistry, 1997, 36, 4768-4774.	1.2	94
64	Enzymeâ^'Substrate Complexes of Adenosine and Cytidine Deaminases:Â Absence of Accumulation of Water Adductsâ€. Biochemistry, 1996, 35, 4697-4703.	1.2	24
65	Cytidine Deaminase Complexed to 3-Deazacytidine:â€‰ A â€œValence Bufferâ€•in Zinc Enzyme Catalysis. Biochemistry, 1996, 35, 1335-1341.	1.2	85
66	Rates of Uncatalyzed Peptide Bond Hydrolysis in Neutral Solution and the Transition State Affinities of Proteases. Journal of the American Chemical Society, 1996, 118, 6105-6109.	6.6	426
67	[11] Transition state and multisubstrate analog inhibitors. Methods in Enzymology, 1995, 249, 284-312.	0.4	82
68	Enzymic hydration of an olefin: the burden borne by fumarase. Journal of the American Chemical Society, 1995, 117, 9588-9589.	6.6	36
69	Cytidine Deaminase. The 2Â·3 Ã… Crystal Structure of an Enzyme: Transition-state Analog Complex. Journal of Molecular Biology, 1994, 235, 635-656.	2.0	372
70	A transition state in pieces: major contributions of entropic effects to ligand binding by adenosine deaminase. Biochemistry, 1992, 31, 7356-7366.	1.2	44
71	Testing the limits of protein-ligand binding discrimination with transition-state analogue inhibitors. Accounts of Chemical Research, 1991, 24, 209-215.	7.6	91
72	The anomalous hydrophilic character of proline. Journal of the American Chemical Society, 1991, 113, 4714-4715.	6.6	40

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73	Contribution of a single hydroxyl group to transition-state discrimination by adenosine deaminase: evidence for an "entropy trap" mechanism. Biochemistry, 1989, 28, 7919-7927.	1.2	48
74	Comparing the polarities of the amino acids: side-chain distribution coefficients between the vapor phase, cyclohexane, 1-octanol, and neutral aqueous solution. Biochemistry, 1988, 27, 1664-1670.	1.2	583
75	Influences of solvent water on protein folding: free energies of solvation of cis and trans peptides are nearly identical. Biochemistry, 1988, 27, 4538-4541.	1.2	161
76	Transition state stabilization by deaminases: Rates of nonenzymatic hydrolysis of adenosine and cytidine. Bioorganic Chemistry, 1987, 15, 100-108.	2.0	83
77	Mechanisms of enzyme action and inhibition: Transition state analogues for acid-base catalysis. The Protein Journal, 1986, 5, 147-155.	1.1	8
78	Solvent water and the biological group-transfer potential of phosphoric and carboxylic anhydrides. Journal of the American Chemical Society, 1985, 107, 4345-4346.	6.6	30
79	Affinities of phosphoric acids, esters, and amides for solvent water. Journal of the American Chemical Society, 1983, 105, 1028-1031.	6.6	34
80	Interaction of the peptide bond with solvent water: a vapor phase analysis. Biochemistry, 1978, 17, 201-204.	1.2	193
81	A vapor phase analysis of the hydrophobic effect. Journal of Theoretical Biology, 1976, 59, 231-235.	0.8	17
82	Enzyme catalysis: Conflicting requirements of substrate access and transition state affinity. Molecular and Cellular Biochemistry, 1974, 3, 207-211.	1.4	99
83	Analog approaches to the structure of the transition state in enzyme reactions. Accounts of Chemical Research, 1972, 5, 10-18.	7.6	623
84	Aldehydes as Inhibitors of Papain. Journal of Biological Chemistry, 1972, 247, 8195-8197.	1.6	161
85	Transition State Analogues for Enzyme Catalysis. Nature, 1969, 223, 704-705.	13.7	403