Stephen J Benkovic

List of Publications by Year
in descending order

361 papers	21,982 citations	7551 77 h-index	15683 125 g-index
368 all docs	368 docs citations	368 times ranked	15544 citing authors

#	Article	IF	Citations
1	A Perspective on Enzyme Catalysis. Science, 2003, 301, 1196-1202.	6.0	1,118
2	Construction and evaluation of the kinetic scheme associated with dihydrofolate reductase from Escherichia coli. Biochemistry, 1987, 26, 4085-4092.	1.2	516
3	Reversible Compartmentalization of de Novo Purine Biosynthetic Complexes in Living Cells. Science, 2008, 320, 103-106.	6.0	459
4	A Dynamic Knockout Reveals That Conformational Fluctuations Influence the Chemical Step of Enzyme Catalysis. Science, 2011, 332, 234-238.	6.0	414
5	A New View into the Regulation of Purine Metabolism: The Purinosome. Trends in Biochemical Sciences, 2017, 42, 141-154.	3.7	386
6	Controlling cellâ€“cell interactions using surface acoustic waves. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 43-48.	3.3	330
7	Surface Sites for Engineering Allosteric Control in Proteins. Science, 2008, 322, 438-442.	6.0	310
8	Replisome-Mediated DNA Replication. Annual Review of Biochemistry, 2001, 70, 181-208.	5.0	309
9	Chemical Basis for Enzyme Catalysis. Biochemistry, 2000, 39, 6267-6274.	1.2	292
10	Metallo-Î²-lactamase: structure and mechanism. Current Opinion in Chemical Biology, 1999, 3, 614-622.	2.8	285
11	Interaction of dihydrofolate reductase with methotrexate: Ensemble and single-molecule kinetics. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 13481-13486.	3.3	254
12	Free-Energy Landscape of Enzyme Catalysis. Biochemistry, 2008, 47, 3317-3321.	1.2	251
13	Kinetic characterization of the polymerase and exonuclease activities of the gene 43 protein of bacteriophage T4. Biochemistry, 1992, 31, 10984-10994.	1.2	242
14	Design and Evolution of New Catalytic Activity with an Existing Protein Scaffold. Science, 2006, 311, 535-538.	6.0	240
15	Flexibility, Diversity, and Cooperativity: Pillars of Enzyme Catalysis. Biochemistry, 2011, 50, 10422-10430.	1.2	235
16	Boron-containing inhibitors of synthetases. Chemical Society Reviews, 2011, 40, 4279.	18.7	224
17	A combinatorial approach to hybrid enzymes independent of DNA homology. Nature Biotechnology, 1999, 17, 1205-1209.	9.4	206
18	On the Mechanism of the Metallo-Î²-lactamase fromBacteroides fragilisâ€. Biochemistry, 1999, 38, 10013-10023.	1.2	192

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19	Evidence for a Functional Role of the Dynamics of Glycine-121 ofEscherichia coliDihydrofolate Reductase Obtained from Kinetic Analysis of a Site-Directed Mutantâ€. Biochemistry, 1997, 36, 15792-15800.	1.2	190
20	Tunneling and Coupled Motion in the Escherichia coli Dihydrofolate Reductase Catalysis. Journal of the American Chemical Society, 2004, 126, 4778-4779.	6.6	189
21	Metabolomics and mass spectrometry imaging reveal channeled de novo purine synthesis in cells. Science, 2020, 368, 283-290.	6.0	185
22	Spatial colocalization and functional link of purinosomes with mitochondria. Science, 2016, 351, 733-737.	6.0	174
23	Coordinated effects of distal mutations on environmentally coupled tunneling in dihydrofolate reductase. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15753-15758.	3.3	171
24	Coupling Interactions of Distal Residues Enhance Dihydrofolate Reductase Catalysis:Â Mutational Effects on Hydride Transfer Ratesâ€. Biochemistry, 2002, 41, 12618-12628.	1.2	167
25	Coupled motions in enzyme catalysis. Current Opinion in Chemical Biology, 2010, 14, 644-651.	2.8	165
26	Dynamics of the Dihydrofolate Reductase-Folate Complex: Catalytic Sites and Regions Known To Undergo Conformational Change Exhibit Diverse Dynamical Features. Biochemistry, 1995, 34, 11037-11048.	1.2	162
27	Solvation, Reorganization Energy, and Biological Catalysis. Journal of Biological Chemistry, 1998, 273, 26257-26260.	1.6	152
28	Dynamics of a flexible loop in dihydrofolate reductase from Escherichia coli and its implication for catalysis. Biochemistry, 1994, 33, 439-442.	1.2	150
29	A perspective on biological catalysis. Nature Structural and Molecular Biology, 1996, 3, 821-833.	3.6	148
30	Split-intein mediated circular ligation used in the synthesis of cyclic peptide libraries in E. coli. Nature Protocols, 2007, 2, 1126-1133.	5.5	148
31	Impact of distal mutations on the network of coupled motions correlated to hydride transfer in dihydrofolate reductase. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 6807-6812.	3.3	140
32	Real-time observation of bacteriophage T4 gp41 helicase reveals an unwinding mechanism. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 19790-19795.	3.3	139
33	Inhibition of HIV Budding by a Genetically Selected Cyclic Peptide Targeting the Gagâˆ'TSG101 Interaction. ACS Chemical Biology, 2008, 3, 757-764.	1.6	136
34	Perspectives on Electrostatics and Conformational Motions in Enzyme Catalysis. Accounts of Chemical Research, 2015, 48, 482-489.	7.6	136
35	From The Cover: The dynamic processivity of the T4 DNA polymerase during replication. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 8289-8294.	3.3	125
36	Transition-state stabilization as a measure of the efficiency of antibody catalysis. Nature, 1995, 375, 388-391.	13.7	124

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37	Substrate-driven chemotactic assembly in an enzyme cascade. Nature Chemistry, 2018, 10, 311-317.	6.6	121
38	Evolution of cyclic peptide protease inhibitors. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11052-11056.	3.3	118
39	Finding Cinderella's slipperâ€"proteins that fit. Nature Biotechnology, 1999, 17, 639-640.	9.4	117
40	Regulation of polymerase exchange between PolÎ· and PolÎ´ by monoubiquitination of PCNA and the movement of DNA polymerase holoenzyme. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 5361-5366.	3.3	117
41	Mechanism of oxygen activation by pteridine-dependent monooxygenases. Accounts of Chemical Research, 1988, 21, 101-107.	7.6	116
42	Electron spin-echo studies of the copper binding site in phenylalanine hydroxylase from Chromobacterium violaceum. Journal of the American Chemical Society, 1988, 110, 1069-1074.	6.6	116
43	[13] Purification and characterization of human immunodeficiency virus type 1 reverse transcriptase. Methods in Enzymology, 1995, 262, 130-144.	0.4	116
44	Catalytic Antibodies. Annual Review of Biochemistry, 1992, 61, 29-54.	5.0	114
45	A systematic method for identifying small-molecule modulators of protein-protein interactions. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 15591-15596.	3.3	110
46	Reaction mechanisms displayed by catalytic antibodies. Accounts of Chemical Research, 1993, 26, 396-404.	7.6	109
47	Ring Structure and Aromatic Substituent Effects on the p<i>K</i>_aof the Benzoxaborole Pharmacophore. ACS Medicinal Chemistry Letters, 2012, 3, 48-52.	1.3	109
48	Multisubstrate adduct inhibitors of glycinamide ribonucleotide transformylase: Synthetic and enzyme-assembled.. Tetrahedron, 1991, 47, 2351-2364.	1.0	106
49	NMR Characterization of the Metallo-Î²-lactamase from Bacteroides fragilis and Its Interaction with a Tight-Binding Inhibitor:â€‰ Role of an Active-Site Loop. Biochemistry, 1999, 38, 14507-14514.	1.2	104
50	Bait and switch strategy for obtaining catalytic antibodies with acyl-transfer capabilities. Journal of the American Chemical Society, 1990, 112, 1274-1275.	6.6	103
51	The Compensation in Î"H[UNK] and Î"S[UNK] Accompanying the Conversion of Lower Order Nucleophilic Displacement Reactions to Higher Order Catalytic Processes. The Temperature Dependence of the Hydrazinolysis and Imidazole-Catalyzed Hydrolysis of Substituted Phenyl Acetates. Journal of the American Chemical Society, 1964, 86, 418-426.	6.6	102
52	Direct Observation of an Enzyme-Bound Intermediate in the Catalytic Cycle of the Metallo-Î²-Lactamase from Bacteroides fragilis. Journal of the American Chemical Society, 1998, 120, 10788-10789.	6.6	102
53	Effects of the Donorâ€"Acceptor Distance and Dynamics on Hydride Tunneling in the Dihydrofolate Reductase Catalyzed Reaction. Journal of the American Chemical Society, 2012, 134, 1738-1745.	6.6	102
54	Replication Clamps and Clamp Loaders. Cold Spring Harbor Perspectives in Biology, 2013, 5, a010165-a010165.	2.3	102

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55	Quantitative Analysis of Purine Nucleotides Indicates That Purinosomes Increase de Novo Purine Biosynthesis. Journal of Biological Chemistry, 2015, 290, 6705-6713.	1.6	101
56	Functional role of a mobile loop of Escherichia coli dihydrofolate reductase in transition-state stabilization. Biochemistry, 1992, 31, 7826-7833.	1.2	100
57	The Control Mechanism for Lagging Strand Polymerase Recycling during Bacteriophage T4 DNA Replication. Molecular Cell, 2006, 21, 153-164.	4.5	100
58	Protein-DNA cross-linking demonstrates stepwise ATP-dependent assembly of T4 DNA polymerase and its accessory proteins on the primer-template. Cell, 1991, 65, 249-258.	13.5	97
59	Identification of Borinic Esters as Inhibitors of Bacterial Cell Growth and Bacterial Methyltransferases, CcrM and MenH. Journal of Medicinal Chemistry, 2005, 48, 7468-7476.	2.9	97
60	The unique chemistry of benzoxaboroles: Current and emerging applications in biotechnology and therapeutic treatments. Bioorganic and Medicinal Chemistry, 2014, 22, 4462-4473.	1.4	97
61	DNA Polymerase as a Molecular Motor and Pump. ACS Nano, 2014, 8, 2410-2418.	7.3	97
62	A Comparison of the Bimolecular and Intramolecular Nucleophilic Catalysis of the Hydrolysis of Substituted Phenyl Acylates by the Dimethylamino Group. Journal of the American Chemical Society, 1963, 85, 1-8.	6.6	91
63	Tunable, pulsatile chemical gradient generation via acoustically driven oscillating bubbles. Lab on A Chip, 2013, 13, 328-331.	3.1	91
64	Genetically Selected Cyclic-Peptide Inhibitors of AICAR Transformylase Homodimerization. Angewandte Chemie - International Edition, 2005, 44, 2760-2763.	7.2	90
65	Regulation of Rad6/Rad18 Activity During DNA Damage Tolerance. Annual Review of Biophysics, 2015, 44, 207-228.	4.5	90
66	Evaluation of the importance of hydrophobic interactions in drug binding to dihydrofolate reductase. Journal of Medicinal Chemistry, 1988, 31, 129-137.	2.9	89
67	Structural requirements for the biosynthesis of backbone cyclic peptide libraries. Chemistry and Biology, 2001, 8, 801-815.	6.2	89
68	Stretching exercises â€" flexibility in dihydrofolate reductase catalysis. Chemistry and Biology, 1998, 5, R105-R113.	6.2	88
69	GPCRs regulate the assembly of a multienzyme complex for purine biosynthesis. Nature Chemical Biology, 2011, 7, 909-915.	3.9	88
70	Elucidation of the Mechanism of the Reaction between Phenylboronic Acid and a Model Diol, Alizarin Red S. Journal of Organic Chemistry, 2012, 77, 2098-2106.	1.7	88
71	Hybrid enzymes: manipulating enzyme design. Trends in Biotechnology, 1998, 16, 258-264.	4.9	86
72	Coupling DNA unwinding activity with primer synthesis in the bacteriophage T4 primosome. Nature Chemical Biology, 2009, 5, 904-912.	3.9	86

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73	Probing the Electrostatics of Active Site Microenvironments along the Catalytic Cycle for <i>Escherichia coli</i> Dihydrofolate Reductase. Journal of the American Chemical Society, 2014, 136, 10349-10360.	6.6	85
74	Purification, Characterization, and Kinetic Studies of a SolubleBacteroides fragilis Metallo-Î²-lactamase That Provides Multiple Antibiotic Resistance. Journal of Biological Chemistry, 1998, 273, 22402-22408.	1.6	84
75	Functional significance of evolving protein sequence in dihydrofolate reductase from bacteria to humans. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 10159-10164.	3.3	84
76	Purinosome formation as a function of the cell cycle. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1368-1373.	3.3	84
77	BIOCHEMISTRY: Enzyme Motions Inside and Out. Science, 2006, 312, 208-209.	6.0	82
78	Microtubule-assisted mechanism for functional metabolic macromolecular complex formation. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12872-12876.	3.3	82
79	Hsp70/Hsp90 chaperone machinery is involved in the assembly of the purinosome. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 2528-2533.	3.3	81
80	Studies on Sulfate Esters. I. Nucleophilic Reactions of Amines with p-Nitrophenyl Sulfate. Journal of the American Chemical Society, 1966, 88, 5504-5511.	6.6	79
81	Catalytic Antibody Model and Mutagenesis Implicate Arginine in Transition-state Stabilization. Journal of Molecular Biology, 1994, 235, 1098-1116.	2.0	78
82	Towards Structure-based Drug Design: Crystal Structure of a Multisubstrate Adduct Complex of Glycinamide Ribonucleotide Transformylase at 1.96 Ã… Resolution. Journal of Molecular Biology, 1995, 249, 153-175.	2.0	77
83	A Distal Mutation Perturbs Dynamic Amino Acid Networks in Dihydrofolate Reductase. Biochemistry, 2013, 52, 4605-4619.	1.2	77
84	Accessory proteins function as matchmakers in the assembly of the T4 DNA polymerase holoenzyme. Current Biology, 1995, 5, 149-157.	1.8	76
85	Direct Observation of Stalled Fork Restart via Fork Regression in the T4 Replication System. Science, 2012, 338, 1217-1220.	6.0	75
86	Peptide bond formation via catalytic antibodies: Synthesis of a novel phosphonate diester hapten. Tetrahedron Letters, 1994, 35, 6853-6856.	0.7	74
87	Mapping Proteinâ˘Protein Interactions in the Bacteriophage T4 DNA Polymerase Holoenzyme Using a Novel Trifunctional Photo-cross-linking and Affinity Reagent. Journal of the American Chemical Society, 2000, 122, 6126-6127.	6.6	73
88	Crystal structure of a bifunctional transformylase and cyclohydrolase enzyme in purine biosynthesis. Nature Structural Biology, 2001, 8, 402-406.	9.7	72
89	Phenylalanine Hydroxylase Stimulator Protein Is a 4Î±-Carbinolamine Dehydratase. Journal of Biological Chemistry, 1983, 258, 10960-10962.	1.6	72
90	Mechanism of Action of Fructose 1,6-Bisphosphatase. Advances in Enzymology and Related Areas of Molecular Biology, 2006, 53, 45-82.	1.3	71

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91	Human de novo purine biosynthesis. Critical Reviews in Biochemistry and Molecular Biology, 2021, 56, 1-16.	2.3	71
92	Structure-reactivity correlation for the hydrolysis of phosphoramidate monoanions. Journal of the American Chemical Society, 1971, 93, 4009-4016.	6.6	70
93	Synthesis and application of derivatizable oligonucleotides. Nucleic Acids Research, 1987, 15, 6455-6467.	6.5	70
94	Subcloning, characterization, and affinity labeling of Escherichia coli glycinamide ribonucleotide transformylase. Biochemistry, 1990, 29, 1436-1443.	1.2	70
95	FamClash: A method for ranking the activity of engineered enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 4142-4147.	3.3	70
96	Identification of a novel boron-containing antibacterial agent (AN0128) with anti-inflammatory activity, for the potential treatment of cutaneous diseases. Bioorganic and Medicinal Chemistry Letters, 2006, 16, 5963-5967.	1.0	69
97	How a holoenzyme for DNA replication is formed. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 99-104.	3.3	69
98	On the cofactor specificity of glycinamide ribonucleotide and 5-aminoimidazole-4-carboxamide ribonucleotide transformylase from chicken liver. Biochemistry, 1981, 20, 1241-1245.	1.2	68
99	Deletion of a Highly Motional Residue Affects Formation of the Michaelis Complex forEscherichia coliDihydrofolate Reductaseâ€. Biochemistry, 1998, 37, 6327-6335.	1.2	68
100	Incremental truncation as a strategy in the engineering of novel biocatalysts. Bioorganic and Medicinal Chemistry, 1999, 7, 2139-2144.	1.4	68
101	Sliding Clamp of the Bacteriophage T4 Polymerase Has Open and Closed Subunit Interfaces in Solutionâ€. Biochemistry, 1999, 38, 7696-7709.	1.2	68
102	Mechanism of strand displacement synthesis by DNA replicative polymerases. Nucleic Acids Research, 2012, 40, 6174-6186.	6.5	68
103	Single-molecule and transient kinetics investigation of the interaction of dihydrofolate reductase with NADPH and dihydrofolate. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 2764-2769.	3.3	67
104	Structural Basis for Amide Hydrolysis Catalyzed by the 43C9 Antibody. Journal of Molecular Biology, 1999, 291, 329-345.	2.0	66
105	Cyanotryptophans as Novel Fluorescent Probes for Studying Protein Conformational Changes and DNAâ€"Protein Interaction. Biochemistry, 2015, 54, 7457-7469.	1.2	66
106	Crystal structure of glycinamide ribonucleotide transformylase from Escherichia coli at 3Â·0 Å... resolution. Journal of Molecular Biology, 1992, 227, 283-292.	2.0	65
107	The structure of a ring-opened proliferating cell nuclear antigen-replication factor C complex revealed by fluorescence energy transfer. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 2546-2551.	3.3	65
108	Probing cellâ€"cell communication with microfluidic devices. Lab on A Chip, 2013, 13, 3152.	3.1	65

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109	A multifunctional protein possessing glycinamide ribonucleotide synthetase, glycinamide ribonucleotide transformylase, and aminoimidazolecarboxamide ribonucleotide synthetase activities in de novo purine biosynthesis. Biochemistry, 1985, 24, 7059-7062.	1.2	64
110	Preorganization and protein dynamics in enzyme catalysis. Chemical Record, 2002, 2, 24-36.	2.9	64
111	A clamp-like biohybrid catalyst for DNA oxidation. Nature Chemistry, 2013, 5, 945-951.	6.6	64
112	Substituent effects of an antibody-catalyzed hydrolysis of phenyl esters: further evidence for an acyl-antibody intermediate. Journal of the American Chemical Society, 1992, 114, 3528-3534.	6.6	62
113	Strength of an Interloop Hydrogen Bond Determines the Kinetic Pathway in Catalysis byEscherichia coliDihydrofolate Reductaseâ€. Biochemistry, 1998, 37, 6336-6342.	1.2	62
114	Collaborative coupling between polymerase and helicase for leading-strand synthesis. Nucleic Acids Research, 2012, 40, 6187-6198.	6.5	62
115	Targeting Tumour Proliferation with a Smallâ€Molecule Inhibitor of AICAR Transformylase Homodimerization. ChemBioChem, 2012, 13, 1628-1634.	1.3	62
116	Role of Adenosine 5â€˜-Triphosphate Hydrolysis in the Assembly of the Bacteriophage T4 DNA Replication Holoenzyme Complex. Biochemistry, 1996, 35, 9253-9265.	1.2	61
117	Dynamic Regulation of a Metabolic Multi-enzyme Complex by Protein Kinase CK2. Journal of Biological Chemistry, 2010, 285, 11093-11099.	1.6	61
118	The interconversion of the 5,6,7,8-tetrahydro-, 6,7,8-dihydro-, and radical forms of 6,6,7,7-tetramethyldihydropterin. A model for the biopterin center of aromatic amino acid mixed function oxidases. Journal of the American Chemical Society, 1984, 106, 7916-7924.	6.6	60
119	Cloning and Characterization of a New Purine Biosynthetic Enzyme: A Non-Folate Glycinamide Ribonucleotide Transformylase from E. coli. Biochemistry, 1994, 33, 2531-2537.	1.2	60
120	Using an AraC-based three-hybrid system to detect biocatalysts in vivo. Nature Biotechnology, 2000, 18, 544-547.	9.4	59
121	Bacteriophage T4 Dda Helicase Translocates in a Unidirectional Fashion on Single-stranded DNA. Journal of Biological Chemistry, 1995, 270, 22236-22242.	1.6	58
122	Stoichiometry and DNA Unwinding by the Bacteriophage T4 41:59 Helicase. Journal of Biological Chemistry, 1996, 271, 14074-14081.	1.6	57
123	Enhanced crossover SCRATCHY: construction and high-throughput screening of a combinatorial library containing multiple non-homologous crossovers. Nucleic Acids Research, 2003, 31, 126e-126.	6.5	57
124	Mapping Protein-Protein Proximity in the Purinosome. Journal of Biological Chemistry, 2012, 287, 36201-36207.	1.6	57
125	Detection of Dihydrofolate Reductase Conformational Change by FRET Using Two Fluorescent Amino Acids. Journal of the American Chemical Society, 2013, 135, 12924-12927.	6.6	57
126	Interloop Contacts Modulate Ligand Cycling during Catalysis byEscherichia coliDihydrofolate Reductaseâ€. Biochemistry, 2001, 40, 867-875.	1.2	56

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127	Role of a solvent-exposed tryptophan in the recognition and binding of antibiotic substrates for a metallo-Î²-lactamase. Protein Science, 2003, 12, 1368-1375.	3.1	56
128	Discovery of antibacterial cyclic peptides that inhibit the ClpXP protease. Protein Science, 2007, 16, 1535-1542.	3.1	56
129	<i>Escherichia coli</i> dihydrofolate reductase catalyzed proton and hydride transfers: Temporal order and the roles of Asp27 and Tyr100. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 18231-18236.	3.3	56
130	Phenylalanine hydroxylase: structural determination of the tetrahydropterin intermediates by carbon-13 NMR spectroscopy. Journal of the American Chemical Society, 1982, 104, 6869-6871.	6.6	55
131	Principles of antibody catalysis. BioEssays, 1988, 9, 107-112.	1.2	55
132	Tracking Sliding Clamp Opening and Closing during Bacteriophage T4 DNA Polymerase Holoenzyme Assemblyâ€. Biochemistry, 2000, 39, 3076-3090.	1.2	54
133	Evolution of highly active enzymes by homology-independent recombination. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 10082-10087.	3.3	54
134	IPRO: An Iterative Computational Protein Library Redesign and Optimization Procedure. Biophysical Journal, 2006, 90, 4167-4180.	0.2	54
135	A multisubstrate adduct inhibitor of a purine biosynthetic enzyme with a picomolar dissociation constant. Journal of Medicinal Chemistry, 1989, 32, 937-940.	2.9	53
136	Dual Role of the 44/62 Protein as a Matchmaker Protein and DNA Polymerase Chaperone during Assembly of the Bacteriophage T4 Holoenzyme Complexâ€. Biochemistry, 1996, 35, 1084-1092.	1.2	53
137	Mechanistic aspects of DNA polymerases: Escherichia coli DNA polymerase I (Klenow fragment) as a paradigm. Chemical Reviews, 1990, 90, 1291-1307.	23.0	52
138	Truncating Î±-Helix Eâ€² of p66 Human Immunodeficiency Virus Reverse Transcriptase Modulates RNase H Function and Impairs DNA Strand Transfer. Journal of Biological Chemistry, 1995, 270, 7068-7076.	1.6	52
139	Evolution of protein function by Domain swapping. Advances in Protein Chemistry, 2001, 55, 29-77.	4.4	51
140	Intricacies in ATP-Dependent Clamp Loading. Structure, 2001, 9, 999-1004.	1.6	51
141	Single-molecule mechanical identification and sequencing. Nature Methods, 2012, 9, 367-372.	9.0	51
142	Nonadditivity of mutational effects at the folate binding site of Escherichia coli dihydrofolate reductase. Biochemistry, 1994, 33, 11576-11585.	1.2	49
143	Dissecting the Order of Bacteriophage T4 DNA Polymerase Holoenzyme Assemblyâ€. Biochemistry, 1998, 37, 7749-7756.	1.2	49
144	A Zinc Ribbon Protein in DNA Replication:â€‰ Primer Synthesis and Macromolecular Interactions by the Bacteriophage T4 Primase. Biochemistry, 2001, 40, 15074-15085.	1.2	49

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145	Identification and Mapping of Protein-Protein Interactions between gp32 and gp59 by Cross-linking. Journal of Biological Chemistry, 2001, 276, 25236-25242.	1.6	49
146	Biochemical Characterization of Bacteriophage T4 Mre11-Rad50 Complex. Journal of Biological Chemistry, 2011, 286, 2382-2392.	1.6	48
147	Acoustofluidic Chemical Waveform Generator and Switch. Analytical Chemistry, 2014, 86, 11803-11810.	3.2	48
148	Microtubule-directed transport of purine metabolons drives their cytosolic transit to mitochondria. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 13009-13014.	3.3	48
149	[20] Kinetic analysis of nucleotide incorporation and misincorporation by klenow fragment of Escherichia coli DNA polymerase I. Methods in Enzymology, 1995, 262, 257-269.	0.4	47
150	Studies on 6-methyl-5-deazatetrahydropterin and its 4a adducts. Journal of the American Chemical Society, 1979, 101, 6068-6076.	6.6	46
151	Electrostatic Characterization of Enzyme Complexes:â€‰ Evaluation of the Mechanism of Catalysis of Dihydrofolate Reductase. Journal of the American Chemical Society, 1997, 119, 2386-2395.	6.6	46
152	Unexpected Formation of an Epoxide-Derived Multisubstrate Adduct Inhibitor on the Active Site of GAR Transformylaseâ€,â€¡. Biochemistry, 2001, 40, 13538-13547.	1.2	46
153	Examination of the Role of the Clamp-loader and ATP Hydrolysis in the Formation of the Bacteriophage T4 Polymerase Holoenzyme. Journal of Molecular Biology, 2003, 326, 435-451.	2.0	46
154	Cyclic Peptides, A Chemical Genetics Tool for Biologists. Cell Cycle, 2005, 4, 552-555.	1.3	46
155	Magnetic resonance studies of the anomeric distribution and manganese binding properties of fructose phosphates. Biochemical and Biophysical Research Communications, 1972, 47, 852-858.	1.0	45
156	Molecular Basis for Nonadditive Mutational Effects in Escherichia coli Dihydrofolate Reductase. Biochemistry, 1995, 34, 15671-15680.	1.2	45
157	Stability of the human polymerase Î´ holoenzyme and its implications in lagging strand DNA synthesis. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E1777-86.	3.3	45
158	Protein-Protein Interactions in the Bacteriophage T4 Replisome. Journal of Biological Chemistry, 2003, 278, 3145-3152.	1.6	44
159	[60] Fructose-1,6-diphosphatase from rabbit liver. Methods in Enzymology, 1975, 42, 369-374.	0.4	43
160	Metabolic channeling: predictions, deductions, and evidence. Molecular Cell, 2021, 81, 3775-3785.	4.5	43
161	Molecular Structure ofEscherichia coliPurT-Encoded Glycinamide Ribonucleotide Transformylaseâ€,â€¡. Biochemistry, 2000, 39, 8791-8802.	1.2	42
162	Multimeric Structure of the Secreted Meprin A Metalloproteinase and Characterization of the Functional Protomer. Journal of Biological Chemistry, 2001, 276, 23207-23211.	1.6	42

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163	On the Solution Structure of the T4 Sliding Clamp (gp45). Biochemistry, 2004, 43, 12723-12727.	1.2	42
164	Assembly of the bacteriophage T4 primosome: Single-molecule and ensemble studies. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 3254-3259.	3.3	42
165	Lab-on-a-chip technologies for single-molecule studies. Lab on A Chip, 2013, 13, 2183.	3.1	42
166	Effect of accessory proteins on T4 DNA polymerase replication fidelity. Journal of Molecular Biology, 1998, 278, 135-146.	2.0	41
167	Synthesis of (6R,11S)- and (6R,11R)-5,10-methylene[11-1H,2H]tetrahydrofolate. Stereochemical paths of serine hydroxymethyltransferase, 5,10-methylenetetrahydrofolate dehydrogenase, and thymidylate synthetase catalysis. Journal of the American Chemical Society, 1984, 106, 1833-1838.	6.6	40
168	Stereoselective synthesis and biological activity of .beta.- and .alpha.-D-arabinose 1,5-diphosphate: analogs of a potent metabolic regulator. Journal of the American Chemical Society, 1984, 106, 7851-7853.	6.6	40
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