Frank M Raushel

List of Publications by Year
in descending order

319 papers	13,651 citations	23544 58 h-index	34964 98 g-index
328 all docs	328 docs citations	328 times ranked	8231 citing authors

#	Article	IF	Citations
1	Structural and Catalytic Diversity within the Amidohydrolase Superfamilyâ€. Biochemistry, 2005, 44, 6383-6391.	1.2	363
2	Channeling of Substrates and Intermediates in Enzyme-Catalyzed Reactions. Annual Review of Biochemistry, 2001, 70, 149-180.	5.0	352
3	Structure of Carbamoyl Phosphate Synthetase:Â A Journey of 96 Å… from Substrate to Productâ€,â€¡. Biochemistry, 1997, 36, 6305-6316.	1.2	322
4	Three-Dimensional Structure of the Zinc-Containing Phosphotriesterase with the Bound Substrate Analog Diethyl 4-Methylbenzylphosphonate,. Biochemistry, 1996, 35, 6020-6025.	1.2	266
5	Mechanism for the Hydrolysis of Organophosphates by the Bacterial Phosphotriesterase. Biochemistry, 2004, 43, 5707-5715.	1.2	263
6	Inactivation of organophosphorus nerve agents by the phosphotriesterase from Pseudomonas diminuta. Archives of Biochemistry and Biophysics, 1990, 277, 155-159.	1.4	253
7	Structure-based activity prediction for an enzyme of unknown function. Nature, 2007, 448, 775-779.	13.7	249
8	Structure-activity relationships in the hydrolysis of substrates by the phosphotriesterase from Pseudomonas diminuta. Biochemistry, 1989, 28, 4650-4655.	1.2	221
9	High Resolution X-ray Structures of Different Metal-Substituted Forms of Phosphotriesterase fromPseudomonas diminutaâ€,â€¡. Biochemistry, 2001, 40, 2712-2722.	1.2	213
10	Three-dimensional structure of the binuclear metal center of phosphotriesterase. Biochemistry, 1995, 34, 7973-7978.	1.2	208
11	Three-Dimensional Structure of Phosphotriesterase: An Enzyme Capable of Detoxifying Organophosphate Nerve Agents. Biochemistry, 1994, 33, 15001-15007.	1.2	206
12	Bacterial detoxification of organophosphate nerve agents. Current Opinion in Microbiology, 2002, 5, 288-295.	2.3	199
13	Catalytic mechanisms for phosphotriesterases. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2013, 1834, 443-453.	1.1	190
14	Molecular Structure of Dihydroorotase:Â A Paradigm for Catalysis through the Use of a Binuclear Metal Centerâ€,â€¡. Biochemistry, 2001, 40, 6989-6997.	1.2	189
15	Mechanism and stereochemical course at phosphorus of the reaction catalyzed by a bacterial phosphotriesterase. Biochemistry, 1988, 27, 1591-1597.	1.2	186
16	Enzymes with Molecular Tunnels. Accounts of Chemical Research, 2003, 36, 539-548.	7.6	173
17	Limits of diffusion in the hydrolysis of substrates by the phosphotriesterase from Pseudomonas diminuta. Biochemistry, 1991, 30, 7438-7444.	1.2	169
18	The Enzyme Function Initiative. Biochemistry, 2011, 50, 9950-9962.	1.2	169

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19	Detoxification of organophosphate nerve agents by bacterial phosphotriesterase. Toxicology and Applied Pharmacology, 2005, 207, 459-470.	1.3	159
20	The Ferrous-dioxy Complex of Neuronal Nitric Oxide Synthase. Journal of Biological Chemistry, 1997, 272, 17349-17353.	1.6	136
21	Metalâ[^]'Substrate Interactions Facilitate the Catalytic Activity of the Bacterial Phosphotriesteraseâ€. Biochemistry, 1996, 35, 10904-10912.	1.2	134
22	Evolution of function in (Î²/Î±)8-barrel enzymes. Current Opinion in Chemical Biology, 2003, 7, 252-264.	2.8	130
23	Enhanced Degradation of Chemical Warfare Agents through Molecular Engineering of the Phosphotriesterase Active Site. Journal of the American Chemical Society, 2003, 125, 8990-8991.	6.6	129
24	Structural Determinants of the Substrate and Stereochemical Specificity of Phosphotriesteraseâ€. Biochemistry, 2001, 40, 1325-1331.	1.2	126
25	Virtual Screening against Metalloenzymes for Inhibitors and Substratesâ€. Biochemistry, 2005, 44, 12316-12328.	1.2	125
26	Enhancement, Relaxation, and Reversal of the Stereoselectivity for Phosphotriesterase by Rational Evolution of Active Site Residuesâ€. Biochemistry, 2001, 40, 1332-1339.	1.2	119
27	Intermediates in the transformation of phosphonates to phosphate by bacteria. Nature, 2011, 480, 570-573.	13.7	112
28	Transition-state structures for enzymic and alkaline phosphotriester hydrolysis. Biochemistry, 1991, 30, 7444-7450.	1.2	109
29	Three-dimensional structure of bacterial luciferase from Vibrio harveyi at 2.4 .ANG. resolution. Biochemistry, 1995, 34, 6581-6586.	1.2	109
30	The Amidotransferase Family of Enzymes:Â Molecular Machines for the Production and Delivery of Ammoniaâ€. Biochemistry, 1999, 38, 7891-7899.	1.2	102
31	Enzymes for the Homeland Defense: Optimizing Phosphotriesterase for the Hydrolysis of Organophosphate Nerve Agents. Biochemistry, 2012, 51, 6463-6475.	1.2	102
32	Predicting Substrates by Docking High-Energy Intermediates to Enzyme Structures. Journal of the American Chemical Society, 2006, 128, 15882-15891.	6.6	101
33	Enzymatic Neutralization of the Chemical Warfare Agent VX: Evolution of Phosphotriesterase for Phosphorothiolate Hydrolysis. Journal of the American Chemical Society, 2013, 135, 10426-10432.	6.6	100
34	Stereoselective Hydrolysis of Organophosphate Nerve Agents by the Bacterial Phosphotriesterase. Biochemistry, 2010, 49, 7978-7987.	1.2	98
35	Catalytic detoxification. Nature, 2011, 469, 310-311.	13.7	96
36	Carbamoyl Phosphate Synthetase:Â Caught in the Act of Glutamine Hydrolysisâ€,â€¡. Biochemistry, 1998, 37, 8825-8831.	1.2	95

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37	The Binding of Substrate Analogs to Phosphotriesterase. Journal of Biological Chemistry, 2000, 275, 30556-30560.	1.6	92
38	Detoxification of organophosphate pesticides using an immobilized phosphotriesterase fromPseudomonas diminuta. Biotechnology and Bioengineering, 1991, 37, 103-109.	1.7	90
39	The catalytic mechanism for aerobic formation of methane by bacteria. Nature, 2013, 497, 132-136.	13.7	90
40	Bovine liver fructokinase: purification and kinetic properties. Biochemistry, 1977, 16, 2169-2175.	1.2	85
41	Functional Annotation and Three-Dimensional Structure of Dr0930 from <i>Deinococcus radiodurans</i>, a Close Relative of Phosphotriesterase in the Amidohydrolase Superfamily. Biochemistry, 2009, 48, 2237-2247.	1.2	82
42	Detoxification of organophosphate pesticides using a nylon based immobilized phosphotriesterase fromPseudomonas diminuta. Applied Biochemistry and Biotechnology, 1991, 31, 59-73.	1.4	81
43	Characterization of a Phosphodiesterase Capable of Hydrolyzing EA 2192, the Most Toxic Degradation Product of the Nerve Agent VX. Biochemistry, 2007, 46, 9032-9040.	1.2	81
44	Stereochemical Constraints on the Substrate Specificity of Phosphotriesterase. Biochemistry, 1999, 38, 1159-1165.	1.2	76
45	Substrate synergism and the kinetic mechanism of yeast hexokinase. Biochemistry, 1982, 21, 1295-1302.	1.2	74
46	Structural characterization of the divalent cation sites of bacterial phosphotriesterase by cadmium-113 NMR spectroscopy. Biochemistry, 1993, 32, 9148-9155.	1.2	74
47	A Clinical-Stage Cysteine Protease Inhibitor blocks SARS-CoV-2 Infection of Human and Monkey Cells. ACS Chemical Biology, 2021, 16, 642-650.	1.6	74
48	The structure of carbamoyl phosphate synthetase determined to 2.1â€…Ã… resolution. Acta Crystallographica Section D: Biological Crystallography, 1999, 55, 8-24.	2.5	73
49	Structure of bacterial luciferase. Current Opinion in Structural Biology, 1995, 5, 798-809.	2.6	68
50	The Small Subunit of Carbamoyl Phosphate Synthetase:Â Snapshots along the Reaction Pathwayâ€. Biochemistry, 1999, 38, 16158-16166.	1.2	68
51	Structure of Diethyl Phosphate Bound to the Binuclear Metal Center of Phosphotriesterase. Biochemistry, 2008, 47, 9497-9504.	1.2	67
52	Perturbations to the Active Site of Phosphotriesteraseâ€. Biochemistry, 1997, 36, 1982-1988.	1.2	66
53	Success of pyridostigmine, physostigmine, eptastigmine and phosphotriesterase treatments in acute sarin intoxication. Toxicology, 1999, 134, 169-178.	2.0	65
54	Carbamoyl Phosphate Synthetase:Â Closure of the B-Domain as a Result of Nucleotide Bindingâ€,â€¡. Biochemistry, 1999, 38, 2347-2357.	1.2	65

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55	Standards for Reporting Enzyme Data: The STRENDA Consortium: What it aims to do and why it should be helpful. Perspectives in Science, 2014, 1, 131-137.	0.6	65
56	Mechanism of the Dihydroorotase Reactionâ€. Biochemistry, 2004, 43, 16285-16292.	1.2	64
57	The evolution of phosphotriesterase for decontamination and detoxification of organophosphorus chemical warfare agents. Chemico-Biological Interactions, 2019, 308, 80-88.	1.7	63
58	Resolution of Chiral Phosphate, Phosphonate, and Phosphinate Esters by an Enantioselective Enzyme Library. Journal of the American Chemical Society, 2006, 128, 15892-15902.	6.6	62
59	Kinetic mechanism of Escherichia coli carbamoyl-phosphate synthetase. Biochemistry, 1978, 17, 5587-5591.	1.2	61
60	Role of Conserved Residues within the Carboxy Phosphate Domain of Carbamoyl Phosphate Synthetaseâ€. Biochemistry, 1996, 35, 14352-14361.	1.2	61
61	Augmented Hydrolysis of Diisopropyl Fluorophosphate in Engineered Mutants of Phosphotriesterase. Journal of Biological Chemistry, 1997, 272, 25596-25601.	1.6	61
62	Tunneling of intermediates in enzyme-catalyzed reactions. Current Opinion in Chemical Biology, 2006, 10, 465-472.	2.8	60
63	Contribution of histidine residues to the conformational stability of ribonuclease T1 and mutant Glu-58 .fwdarw. Ala. Biochemistry, 1990, 29, 7572-7576.	1.2	59
64	Phosphotriesteraseâ€"A Promising Candidate for Use in Detoxification of Organophosphates. Fundamental and Applied Toxicology, 1994, 23, 578-584.	1.9	58
65	Stereoselective Detoxification of Chiral Sarin and Soman Analogues by Phosphotriesterase. Bioorganic and Medicinal Chemistry, 2001, 9, 2083-2091.	1.4	58
66	Identification of the Histidine Ligands to the Binuclear Metal Center of Phosphotriesterase by Site-Directed Mutagenesis. Biochemistry, 1994, 33, 4265-4272.	1.2	57
67	Evolution of Enzymatic Activities in the Enolase Superfamily:â€‰ N-Succinylamino Acid Racemase and a New Pathway for the Irreversible Conversion of d- to l-Amino Acids. Biochemistry, 2006, 45, 4455-4462.	1.2	56
68	Nanoscavenger provides long-term prophylactic protection against nerve agents in rodents. Science Translational Medicine, 2019, 11, .	5.8	56
69	Self-Assembly of the Binuclear Metal Center of Phosphotriesteraseâ€. Biochemistry, 2000, 39, 7357-7364.	1.2	55
70	Variants of Phosphotriesterase for the Enhanced Detoxification of the Chemical Warfare Agent VR. Biochemistry, 2015, 54, 5502-5512.	1.2	55
71	Investigation of ribonuclease T1 folding intermediates by hydrogen-deuterium amide exchange-two-dimensional NMR spectroscopy. Biochemistry, 1993, 32, 6152-6156.	1.2	54
72	Molecular Engineering of Organophosphate Hydrolysis Activity from a Weak Promiscuous Lactonase Template. Journal of the American Chemical Society, 2013, 135, 11670-11677.	6.6	53

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73	Role of the four conserved histidine residues in the amidotransferase domain of carbamoyl phosphate synthetase. Biochemistry, 1991, 30, 7901-7907.	1.2	52
74	The enzymatic conversion of phosphonates to phosphate by bacteria. Current Opinion in Chemical Biology, 2013, 17, 589-596.	2.8	51
75	Determination of rate-limiting steps of Escherichia coli carbamoyl-phosphate synthase. Rapid quench and isotope partitioning experiments. Biochemistry, 1979, 18, 3424-3429.	1.2	49
76	Hydrolysis of Phosphotriesters:Â Determination of Transition States in Parallel Reactions by Heavy-Atom Isotope Effects. Journal of the American Chemical Society, 2001, 123, 9246-9253.	6.6	49
77	Encapsulation of Phosphotriesterase within Murine Erythrocytes. Toxicology and Applied Pharmacology, 1994, 124, 296-301.	1.3	48
78	Hydrolysis of Phosphodiesters through Transformation of the Bacterial Phosphotriesterase. Journal of Biological Chemistry, 1998, 273, 17445-17450.	1.6	48
79	The Substrate and Anomeric Specificity of Fructokinase. Journal of Biological Chemistry, 1973, 248, 8174-8177.	1.6	48
80	Phosphorus-31 nuclear magnetic resonance application to positional isotope exchange reactions catalyzed by Escherichia coli carbamoyl-phosphate synthetase: analysis of forward and reverse enzymic reactions. Biochemistry, 1980, 19, 3170-3174.	1.2	47
81	High-Resolution X-Ray Structure of Isoaspartyl Dipeptidase fromEscherichia coliâ€,â€¡. Biochemistry, 2003, 42, 4874-4882.	1.2	47
82	Theoretical Investigation of the Reaction Mechanism of the Dinuclear Zinc Enzyme Dihydroorotase. Chemistry - A European Journal, 2008, 14, 4287-4292.	1.7	47
83	Analysis of the galactosyltransferase reaction by positional isotope exchange and secondary deuterium isotope effects. Archives of Biochemistry and Biophysics, 1988, 267, 54-59.	1.4	44
84	Phosphotriesterase: An Enzyme in Search of Its Natural Substrate. Advances in Enzymology and Related Areas of Molecular Biology, 2006, 74, 51-93.	1.3	44
85	Antiferromagnetic coupling in the binuclear metal cluster of manganese-substituted phosphotriesterase. Journal of the American Chemical Society, 1993, 115, 12173-12174.	6.6	42
86	Inhibitor binding to the Phe53Trp mutant of HIV-1 protease promotes conformational changes detectable by spectrofluorometry. Biochemistry, 1993, 32, 3557-3563.	1.2	42
87	Stereospcific enzymatic hydrolysis of phosphorus-sulfur bonds in chiral organophosphate triesters. Bioorganic and Medicinal Chemistry Letters, 1994, 4, 1473-1478.	1.0	42
88	Catalytic Mechanism and Three-Dimensional Structure of Adenine Deaminase[,]. Biochemistry, 2011, 50, 1917-1927.	1.2	42
89	A Molecular Wedge for Triggering the Amidotransferase Activity of Carbamoyl Phosphate Synthetase. Biochemistry, 1994, 33, 2945-2950.	1.2	41
90	Carbamoyl phosphate synthetase: a tunnel runs through it. Current Opinion in Structural Biology, 1998, 8, 679-685.	2.6	41

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91	Substrate Distortion and the Catalytic Reaction Mechanism of 5-Carboxyvanillate Decarboxylase. Journal of the American Chemical Society, 2016, 138, 826-836.	6.6	41
92	Stopped-flow kinetic analysis of the bacterial luciferase reaction. Biochemistry, 1992, 31, 3807-3813.	1.2	40
93	An Engineered Blockage within the Ammonia Tunnel of Carbamoyl Phosphate Synthetase Prevents the Use of Glutamine as a Substrate but Not Ammoniaâ€. Biochemistry, 2000, 39, 3240-3247.	1.2	39
94	Catalytic properties of the PepQ prolidase from Escherichia coli. Archives of Biochemistry and Biophysics, 2004, 429, 224-230.	1.4	39
95	Protonation of the Binuclear Metal Center within the Active Site of Phosphotriesteraseâ€. Biochemistry, 2005, 44, 11005-11013.	1.2	39
96	Annotating Enzymes of Unknown Function:â€‰ N-Formimino-l-glutamate Deiminase Is a Member of the Amidohydrolase Superfamily. Biochemistry, 2006, 45, 1997-2005.	1.2	39
97	Deuterium Kinetic Isotope Effects and the Mechanism of the Bacterial Luciferase Reactionâ€. Biochemistry, 1998, 37, 2596-2606.	1.2	38
98	Mechanism of the Reaction Catalyzed by Isoaspartyl Dipeptidase fromEscherichia coliâ€,â€¡. Biochemistry, 2005, 44, 7115-7124.	1.2	38
99	STRENDA DB: enabling the validation and sharing of enzyme kinetics data. FEBS Journal, 2018, 285, 2193-2204.	2.2	38
100	A multinuclear nuclear magnetic resonance study of the monovalent-divalent cation sites of pyruvate kinase. Biochemistry, 1980, 19, 5481-5485.	1.2	37
101	Proposed mechanism for the bacterial bioluminescence reaction involving a dioxirane intermediate. Biochemical and Biophysical Research Communications, 1989, 164, 1137-1142.	1.0	37
102	Regulatory Control of the Amidotransferase Domain of Carbamoyl Phosphate Synthetase. Biochemistry, 1998, 37, 16773-16779.	1.2	37
103	Enzymatic Resolution of Chiral Phosphinate Esters. Journal of the American Chemical Society, 2004, 126, 8888-8889.	6.6	37
104	A Combined Experimental-Theoretical Study of the LigW-Catalyzed Decarboxylation of 5-Carboxyvanillate in the Metabolic Pathway for Lignin Degradation. ACS Catalysis, 2017, 7, 4968-4974.	5.5	37
105	Comparison of the Functional Differences for the Homologous Residues within the Carboxy Phosphate and Carbamate Domains of Carbamoyl Phosphate Synthetaseâ€. Biochemistry, 1996, 35, 14362-14369.	1.2	35
106	Carbamoyl-phosphate Synthetase. Journal of Biological Chemistry, 2002, 277, 39722-39727.	1.6	35
107	Quantifying the allosteric properties of Escherichia coli carbamyl phosphate synthetase: determination of thermodynamic linked-function parameters in an ordered kinetic mechanism. Biochemistry, 1992, 31, 2309-2316.	1.2	34
108	The catalytic mechanism of galactose mutarotase. Protein Science, 2003, 12, 1051-1059.	3.1	34

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109	The Hunt for 8-Oxoguanine Deaminase. Journal of the American Chemical Society, 2010, 132, 1762-1763.	6.6	34
110	Paramagnetic probes for carbamoyl-phosphate synthetase: metal ion binding studies and preparation of nitroxide spin-labeled derivatives. Biochemistry, 1979, 18, 5562-5566.	1.2	33
111	Mechanism-Based Inactivation of Phosphotriesterase by Reaction of a Critical Histidine with a Ketene Intermediate. Biochemistry, 1995, 34, 743-749.	1.2	33
112	The Binding of Inosine Monophosphate to Escherichia coli Carbamoyl Phosphate Synthetase. Journal of Biological Chemistry, 1999, 274, 22502-22507.	1.6	33
113	Mechanism of Cobyrinic Acid a,c-Diamide Synthetase from Salmonella typhimurium LT2. Biochemistry, 2004, 43, 10619-10627.	1.2	33
114	On the Catalytic Mechanism of Human ATP Citrate Lyase. Biochemistry, 2012, 51, 5198-5211.	1.2	33
115	Calculation of retention indices for benzene and benzene derivatives on the basis of molecular structure. Journal of Chromatography A, 1972, 65, 556-559.	1.8	32
116	Channeling of Ammonia through the Intermolecular Tunnel Contained within Carbamoyl Phosphate Synthetase. Journal of the American Chemical Society, 1999, 121, 3803-3804.	6.6	32
117	Rationally Engineered Mutants of Phosphotriesterase for Preparative Scale Isolation of Chiral Organophosphates. Journal of the American Chemical Society, 2000, 122, 10206-10207.	6.6	32
118	Structure and Catalytic Mechanism of LigI: Insight into the Amidohydrolase Enzymes of cog3618 and Lignin Degradation. Biochemistry, 2012, 51, 3497-3507.	1.2	32
119	Assignment of Pterin Deaminase Activity to an Enzyme of Unknown Function Guided by Homology Modeling and Docking. Journal of the American Chemical Society, 2013, 135, 795-803.	6.6	32
120	Interrogation of the Substrate Profile and Catalytic Properties of the Phosphotriesterase from <i>Sphingobium</i> sp. Strain TCM1: An Enzyme Capable of Hydrolyzing Organophosphate Flame Retardants and Plasticizers. Biochemistry, 2015, 54, 7539-7549.	1.2	32
121	Differential roles for three conserved histidine residues within the large subunit of carbamoyl phosphate synthetase. Biochemistry, 1993, 32, 232-240.	1.2	31
122	Are turns required for the folding of ribonuclease T1?. Protein Science, 1996, 5, 204-211.	3.1	31
123	Identification of a Phosphorylated Enzyme Intermediate in the Catalytic Mechanism for Selenophosphate Synthetase. Journal of the American Chemical Society, 1997, 119, 6684-6685.	6.6	31
124	Synchronization of the Three Reaction Centers within Carbamoyl Phosphate Synthetase. Biochemistry, 2000, 39, 5051-5056.	1.2	31
125	Stereochemical Specificity of Organophosphorus Acid Anhydrolase toward p-Nitrophenyl Analogs of Soman and Sarin. Bioorganic Chemistry, 2001, 29, 27-35.	2.0	31
126	N-Acetyl-d-glucosamine-6-phosphate Deacetylase:â€‰ Substrate Activation via a Single Divalent Metal Ion. Biochemistry, 2007, 46, 7942-7952.	1.2	31

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127	Structural and Mechanistic Characterization of <scp>l</scp>-Histidinol Phosphate Phosphatase from the Polymerase and Histidinol Phosphatase Family of Proteins. Biochemistry, 2013, 52, 1101-1112.	1.2	31
128	Overcoming the Challenges of Enzyme Evolution To Adapt Phosphotriesterase for V-Agent Decontamination. Biochemistry, 2019, 58, 2039-2053.	1.2	31
129	Regulatory Changes in the Control of Carbamoyl Phosphate Synthetase Induced by Truncation and Mutagenesis of the Allosteric Binding Domain. Biochemistry, 1995, 34, 13920-13927.	1.2	30
130	Allosteric Effects of Carbamoyl Phosphate Synthetase fromEscherichia coliAre Entropy-Drivenâ€. Biochemistry, 1996, 35, 11918-11924.	1.2	30
131	A Combined Theoretical and Experimental Study of the Ammonia Tunnel in Carbamoyl Phosphate Synthetase. Journal of the American Chemical Society, 2009, 131, 10211-10219.	6.6	30
132	Three-Dimensional Structure and Catalytic Mechanism of Cytosine Deaminase. Biochemistry, 2011, 50, 5077-5085.	1.2	30
133	Mechanism and Structure of Î3-Resorcylate Decarboxylase. Biochemistry, 2018, 57, 3167-3175.	1.2	30
134	CO2 Is Required for the Assembly of the Binuclear Metal Center of Phosphotriesterase. Journal of the American Chemical Society, 1995, 117, 7580-7581.	6.6	29
135	Stereospecificity in the enzymatic hydrolysis of cyclosarin (GF). Enzyme and Microbial Technology, 2005, 37, 547-555.	1.6	29
136	Chemical Mechanism of the Phosphotriesterase from <i>Sphingobium</i> sp. Strain TCM1, an Enzyme Capable of Hydrolyzing Organophosphate Flame Retardants. Journal of the American Chemical Society, 2016, 138, 2921-2924.	6.6	29
137	Textile-based wearable solid-contact flexible fluoride sensor: Toward biodetection of G-type nerve agents. Biosensors and Bioelectronics, 2021, 182, 113172.	5.3	29
138	Mechanism-based inactivation of a bacterial phosphotriesterase by an alkynyl phosphate ester. Journal of the American Chemical Society, 1991, 113, 8560-8561.	6.6	28
139	Transposition of Protein Sequences: Circular Permutation of Ribonuclease T1. Journal of the American Chemical Society, 1994, 116, 5529-5533.	6.6	28
140	Conformational stability of ribonuclease T1 determined by hydrogenâ€deuterium exchange. Protein Science, 1997, 6, 1387-1395.	3.1	28
141	Structural and Kinetic Studies of Sugar Binding to Galactose Mutarotase from Lactococcus lactis. Journal of Biological Chemistry, 2002, 277, 45458-45465.	1.6	28
142	Determination of the rate-limiting steps and chemical mechanism of fructokinase by isotope exchange, isotope partitioning, and pH studies. Biochemistry, 1977, 16, 2176-2181.	1.2	27
143	Methyl chymotrypsin catalyzed hydrolyses of specific substrate esters indicate multiple proton catalysis is possible with a modified charge relay triad. Journal of the American Chemical Society, 1988, 110, 8246-8247.	6.6	27
144	A versatile mechanism based reaction probe for the direct selection of biocatalysts. Bioorganic and Medicinal Chemistry Letters, 1996, 6, 2117-2120.	1.0	27

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145	Carbamoyl phosphate synthetase: a crooked path from substrates to products. Current Opinion in Chemical Biology, 1998, 2, 624-632.	2.8	26
146	Substrate and stereochemical specificity of the organophosphorus acid anhydrolase from Alteromonas sp. JD6.5 toward p -nitrophenyl phosphotriesters. Bioorganic and Medicinal Chemistry Letters, 2000, 10, 1285-1288.	1.0	26
147	Uronate Isomerase:â€‰ A Nonhydrolytic Member of the Amidohydrolase Superfamily with an Ambivalent Requirement for a Divalent Metal Ion. Biochemistry, 2006, 45, 7453-7462.	1.2	26
148	Activation of the Binuclear Metal Center through Formation of Phosphotriesteraseâ^'Inhibitor Complexesâ€. Biochemistry, 2007, 46, 3435-3442.	1.2	26
149	Reaction Mechanism of Zinc-Dependent Cytosine Deaminase from <i>Escherichia coli</i>: A Quantum-Chemical Study. Journal of Physical Chemistry B, 2014, 118, 5644-5652.	1.2	26
150	Deconstruction of the Catalytic Array within the Amidotransferase Subunit of Carbamoyl Phosphate Synthetaseâ€. Biochemistry, 1999, 38, 15909-15914.	1.2	25
151	Kinetic Evidence Supports the Existence of Two Halide Binding Sites that Have a Distinct Impact on the Heme Iron Microenvironment in Myeloperoxidaseâ€. Biochemistry, 2007, 46, 398-405.	1.2	25
152	At the Periphery of the Amidohydrolase Superfamily:â€‰ Bh0493 from <i>Bacillus halodurans</i> Catalyzes the Isomerization of <scp>d</scp>-Galacturonate to <scp>d</scp>-Tagaturonate[,]. Biochemistry, 2008, 47, 1194-1206.	1.2	25
153	Target selection and annotation for the structural genomics of the amidohydrolase and enolase superfamilies. Journal of Structural and Functional Genomics, 2009, 10, 107-125.	1.2	25
154	Structural Determinants for the Stereoselective Hydrolysis of Chiral Substrates by Phosphotriesterase. Biochemistry, 2010, 49, 7988-7997.	1.2	25
155	Intrinsic GTPase Activity of K-RAS Monitored by Native Mass Spectrometry. Biochemistry, 2019, 58, 3396-3405.	1.2	25
156	Allosteric Control of the Oligomerization of Carbamoyl Phosphate Synthetase from Escherichia coli. Biochemistry, 2001, 40, 11030-11036.	1.2	24
157	Operational Control of Stereoselectivity during the Enzymatic Hydrolysis of Racemic Organophosphorus Compounds. Journal of the American Chemical Society, 2003, 125, 7526-7527.	6.6	24
158	Differentiation of chiral phosphorus enantiomers by 31P and 1H NMR spectroscopy using amino acid derivatives as chemical solvating agents. Tetrahedron: Asymmetry, 2007, 18, 1391-1397.	1.8	24
159	Computational Design of Enzymes. Chemistry and Biology, 2008, 15, 421-423.	6.2	24
160	Enzymatic Deamination of the Epigenetic Base <i>N</i>-6-Methyladenine. Journal of the American Chemical Society, 2011, 133, 2080-2083.	6.6	24
161	Discovery of a Glutamine Kinase Required for the Biosynthesis of the <i>O</i>-Methyl Phosphoramidate Modifications Found in the Capsular Polysaccharides of <i>Campylobacter jejuni</i>. Journal of the American Chemical Society, 2017, 139, 9463-9466.	6.6	24
162	Restricted Passage of Reaction Intermediates through the Ammonia Tunnel of Carbamoyl Phosphate Synthetase. Journal of Biological Chemistry, 2000, 275, 26233-26240.	1.6	24

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163	Distances between structural metal ion, substrates, and allosteric modifier of fructose bisphosphatase. Biochemistry, 1981, 20, 359-362.	1.2	23
164	Expression ofPseudomonas phosphotriesterase activity in the fall armyworm confers resistance to insecticides. Experientia, 1990, 46, 729-731.	1.2	23
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