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Investigation of the *Bacillus cereus* phosphonoacetaldehyde hydrolase. Evidence for a Schiff base mechanism and sequence analysis of an active-site peptide containing the catalytic lysine residue

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#	Paper	IF	Citations
44	Phosphonoacetaldehyde hydrolase from <i>Pseudomonas aeruginosa</i> : purification properties and comparison with <i>Bacillus cereus</i> enzyme. <i>BBA - Proteins and Proteomics</i> , <b>1989</b> , 997, 193-8		29
43	The synthesis of 3-phosphonoalanine, phosphonopyruvic acid and phosphonolactic acid. Scission of the C-P bond during diazotization of phosphonoalanine. <i>FEBS Journal</i> , <b>1990</b> , 194, 373-6		10
42	The use of 6-(difluoromethyl)indole to study the activation of indole by tryptophan synthase. <i>Archives of Biochemistry and Biophysics</i> , <b>1991</b> , 286, 473-80	4.1	6
41	Involvement of the <i>Escherichia coli</i> phn (psiD) gene cluster in assimilation of phosphorus in the form of phosphonates, phosphite, Pi esters, and Pi. <i>Journal of Bacteriology</i> , <b>1991</b> , 173, 587-600	3.5	114
40	Allosteric regulation of phosphonoacetaldehyde hydrolase by n-butylphosphonic acid. <i>Biochemical Journal</i> , <b>1991</b> , 280 ( Pt 2), 557-9	3.8	
39	Detection of a novel carbon-phosphorus bond cleavage activity in cell-free extracts of an environmental <i>Pseudomonas fluorescens</i> isolate. <i>Biochemical and Biophysical Research Communications</i> , <b>1992</b> , 184, 1022-7	3.4	24
38	Investigation of the substrate binding and catalytic groups of the P-C bond cleaving enzyme, phosphonoacetaldehyde hydrolase. <i>Archives of Biochemistry and Biophysics</i> , <b>1992</b> , 296, 144-51	4.1	26
37	Evidence for two phosphonate degradative pathways in <i>Enterobacter aerogenes</i> . <i>Journal of Bacteriology</i> , <b>1992</b> , 174, 2501-10	3.5	71
36	Molecular genetic studies of a 10.9-kb operon in <i>Escherichia coli</i> for phosphonate uptake and biodegradation. <i>FEMS Microbiology Letters</i> , <b>1992</b> , 100, 133-9	2.9	53
35	In vitro characterization of a phosphate starvation-independent carbon-phosphorus bond cleavage activity in <i>Pseudomonas fluorescens</i> 23F. <i>Journal of Bacteriology</i> , <b>1994</b> , 176, 320-4	3.5	41
34	Molecular genetics of carbon-phosphorus bond cleavage in bacteria. <i>Biodegradation</i> , <b>1994</b> , 5, 175-84	4.1	60
33	The purification and properties of phosphonoacetate hydrolase, a novel carbon-phosphorus bond-cleavage enzyme from <i>Pseudomonas fluorescens</i> 23F. <i>FEBS Journal</i> , <b>1995</b> , 234, 225-30		56
32	Phosphoenolpyruvate mutase catalysis of phosphoryl transfer in phosphoenolpyruvate: kinetics and mechanism of phosphorus-carbon bond formation. <i>Biochemistry</i> , <b>1996</b> , 35, 4628-35	3.2	22
31	The Biochemical Action of Arsonic Acids Especially As Phosphate Analogues. <i>Advances in Inorganic Chemistry</i> , <b>1996</b> , 44, 191-227	2.1	106
30	First characterization of the phosphonoacetaldehyde hydrolase gene of <i>Pseudomonas aeruginosa</i> . <i>Gene</i> , <b>1997</b> , 197, 405-12	3.8	11
29	Enzyme-catalysed Transformations of Compounds Containing the $\text{CH}_2\text{-AsO}_3\text{H}_2$ Group. <i>Applied Organometallic Chemistry</i> , <b>1997</b> , 11, 251-255	3.1	4
28	Insights into the mechanism of catalysis by the P-C bond-cleaving enzyme phosphonoacetaldehyde hydrolase derived from gene sequence analysis and mutagenesis. <i>Biochemistry</i> , <b>1998</b> , 37, 9305-15	3.2	63

27	In vitro cleavage of the carbon-phosphorus bond of phosphonopyruvate by cell extracts of an environmental Burkholderia cepacia isolate. <i>Biochemical and Biophysical Research Communications</i> , <b>1998</b> , 248, 378-81	3.4	15
26	Stability and Structure of Metal Ion Complexes Formed in Solution with Acetyl Phosphate and Acetonylphosphonate: Quantification of Isomeric Equilibria. <i>Journal of the American Chemical Society</i> , <b>1999</b> , 121, 6248-6257	16.4	50
25	Metal ion-carbonyl oxygen recognition in complexes of acetyl phosphate. <i>Journal of Inorganic Biochemistry</i> , <b>2000</b> , 79, 247-51	4.2	9
24	Quantification of isomeric equilibria for metal ion complexes formed in solution by phosphate or phosphonate ligands with a weakly coordinating second site. <i>Coordination Chemistry Reviews</i> , <b>2000</b> , 200-202, 563-594	23.2	61
23	Biodegradation of Pesticides Containing Carbon-to-Phosphorus Bond. <i>ACS Symposium Series</i> , <b>2000</b> , 145-163	16.3	14
22	The crystal structure of bacillus cereus phosphonoacetaldehyde hydrolase: insight into catalysis of phosphorus bond cleavage and catalytic diversification within the HAD enzyme superfamily. <i>Biochemistry</i> , <b>2000</b> , 39, 10385-96	3.2	124
21	Kinetic evidence for a substrate-induced fit in phosphonoacetaldehyde hydrolase catalysis. <i>Biochemistry</i> , <b>2002</b> , 41, 13370-7	3.2	25
20	Enzymatic synthesis of radiolabeled phosphonoacetaldehyde. <i>Analytical Biochemistry</i> , <b>2003</b> , 322, 233-7	3.1	6
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17	Analysis of the substrate specificity loop of the HAD superfamily cap domain. <i>Biochemistry</i> , <b>2004</b> , 43, 2812-20	3.2	78
16	Mechanism and applications of phosphite dehydrogenase. <i>Bioorganic Chemistry</i> , <b>2005</b> , 33, 171-89	5.1	56
15	Site-directed mutagenesis of active site residues of phosphite dehydrogenase. <i>Biochemistry</i> , <b>2005</b> , 44, 4765-74	3.2	28
14	Evolutionary genomics of the HAD superfamily: understanding the structural adaptations and catalytic diversity in a superfamily of phosphoesterases and allied enzymes. <i>Journal of Molecular Biology</i> , <b>2006</b> , 361, 1003-34	6.5	315
13	Theoretical insights into catalysis by phosphonoacetaldehyde hydrolase. <i>Molecular Physics</i> , <b>2006</b> , 104, 2203-2211	1.7	7
12	Diversification of function in the haloacid dehalogenase enzyme superfamily: The role of the cap domain in hydrolytic phosphorus-carbon bond cleavage. <i>Bioorganic Chemistry</i> , <b>2006</b> , 34, 394-409	5.1	29
11	Towards understanding phosphonoacetaldehyde hydrolase: an alternative mechanism involving proton transfer that triggers P-C bond cleavage. <i>Chemical Communications</i> , <b>2008</b> , 4162-4	5.8	2
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9	Phosphonate biosynthesis and catabolism: a treasure trove of unusual enzymology. <i>Current Opinion in Chemical Biology</i> , <b>2013</b> , 17, 580-8	9.7	67
8	2-Aminoethylphosphonate utilization by the cold-adapted <i>Geomyces pannorum</i> P11 strain. <i>Current Microbiology</i> , <b>2014</b> , 68, 330-5	2.4	5
7	The kinetic analysis of the substrate specificity of motif 5 in a HAD hydrolase-type phosphosugar phosphatase of <i>Arabidopsis thaliana</i> . <i>Planta</i> , <b>2014</b> , 240, 479-87	4.7	4
6	Directed Regulation of Multienzyme Complexes of 2-Oxo Acid Dehydrogenases Using Phosphonate and Phosphinate Analogs of 2-Oxo Acids. <i>Biochemistry (Moscow)</i> , <b>2016</b> , 81, 1498-1521	2.9	10
5	Phosphonate Biochemistry. <i>Chemical Reviews</i> , <b>2017</b> , 117, 5704-5783	68.1	232
4	Kinetic characterization and molecular modeling of trehalose-6-phosphate phosphatase from <i>Anopheles gambiae</i> and expressed in <i>Pichia pastoris</i> . <i>African Journal of Biotechnology</i> , <b>2017</b> , 16, 1366-1378	9.6	0
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2	Organophosphonate utilization by the wild-type strain of <i>Pseudomonas fluorescens</i> . <i>Applied and Environmental Microbiology</i> , <b>1992</b> , 58, 2993-9	4.8	26
1	Phosphonoacetylaldehyde hydrolase. <b>1991</b> , 1175-1177		