

# Christian P Whitman

## List of Publications by Citations

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69 papers	1,756 citations	25 h-index	40 g-index
71 ext. papers	1,867 ext. citations	5 avg, IF	4.18 L-index

#	Paper	IF	Citations
69	4-Oxalocrotonate tautomerase: pH dependence of catalysis and pKa values of active site residues. <i>Biochemistry</i> , <b>1996</b> , 35, 814-23	3.2	116
68	Chemical and enzymic ketonization of 2-hydroxymuconate, a conjugated enol. <i>Journal of the American Chemical Society</i> , <b>1991</b> , 113, 3154-3162	16.4	112
67	The 4-oxalocrotonate tautomerase family of enzymes: how nature makes new enzymes using a beta-alpha-beta structural motif. <i>Archives of Biochemistry and Biophysics</i> , <b>2002</b> , 402, 1-13	4.1	95
66	Catalytic role of the amino-terminal proline in 4-oxalocrotonate tautomerase: affinity labeling and heteronuclear NMR studies. <i>Biochemistry</i> , <b>1996</b> , 35, 803-13	3.2	85
65	Crystal structure of macrophage migration inhibitory factor complexed with (E)-2-fluoro-p-hydroxycinnamate at 1.8 Å resolution: implications for enzymatic catalysis and inhibition. <i>Biochemistry</i> , <b>1999</b> , 38, 7444-52	3.2	79
64	Characterization of the role of the amino-terminal proline in the enzymatic activity catalyzed by macrophage migration inhibitory factor. <i>Biochemistry</i> , <b>1998</b> , 37, 10195-202	3.2	72
63	Crystal structure of 4-oxalocrotonate tautomerase inactivated by 2-oxo-3-pentynoate at 2.4 Å resolution: analysis and implications for the mechanism of inactivation and catalysis. <i>Biochemistry</i> , <b>1998</b> , 37, 14692-700	3.2	70
62	The structural basis for the perturbed pKa of the catalytic base in 4-oxalocrotonate tautomerase: kinetic and structural effects of mutations of Phe-50. <i>Biochemistry</i> , <b>2001</b> , 40, 1984-95	3.2	65
61	Kinetic, stereochemical, and structural effects of mutations of the active site arginine residues in 4-oxalocrotonate tautomerase. <i>Biochemistry</i> , <b>1999</b> , 38, 12343-57	3.2	62
60	Reactions of trans-3-chloroacrylic acid dehalogenase with acetylene substrates: consequences of and evidence for a hydration reaction. <i>Biochemistry</i> , <b>2003</b> , 42, 8762-73	3.2	60
59	The 4-oxalocrotonate tautomerase- and YwhB-catalyzed hydration of 3E-haloacrylates: implications for the evolution of new enzymatic activities. <i>Journal of the American Chemical Society</i> , <b>2003</b> , 125, 14282-3	16.4	49
58	Kinetic and structural effects of mutations of the catalytic amino-terminal proline in 4-oxalocrotonate tautomerase. <i>Biochemistry</i> , <b>1997</b> , 36, 14551-60	3.2	46
57	Effects of mutations of the active site arginine residues in 4-oxalocrotonate tautomerase on the pKa values of active site residues and on the pH dependence of catalysis. <i>Biochemistry</i> , <b>1999</b> , 38, 12358-66	3.2	46
56	Cloning, expression, and characterization of a cis-3-chloroacrylic acid dehalogenase: insights into the mechanistic, structural, and evolutionary relationship between isomer-specific 3-chloroacrylic acid dehalogenases. <i>Biochemistry</i> , <b>2004</b> , 43, 759-72	3.2	41
55	Evolution of enzymatic activity in the tautomerase superfamily: mechanistic and structural studies of the 1,3-dichloropropene catabolic enzymes. <i>Bioorganic Chemistry</i> , <b>2004</b> , 32, 376-92	5.1	40
54	The X-ray structure of trans-3-chloroacrylic acid dehalogenase reveals a novel hydration mechanism in the tautomerase superfamily. <i>Journal of Biological Chemistry</i> , <b>2004</b> , 279, 11546-52	5.4	38
53	Mechanistic characterization of a bacterial malonate semialdehyde decarboxylase: identification of a new activity on the tautomerase superfamily. <i>Journal of Biological Chemistry</i> , <b>2003</b> , 278, 48674-83	5.4	36

52	Absolute stereochemical course of the 3-carboxymuconate cycloisomerases from <i>Pseudomonas putida</i> and <i>Acinetobacter calcoaceticus</i> : analysis and implications. <i>Journal of the American Chemical Society</i> , <b>1987</b> , 109, 5514-5519	16.4	34
51	Crystal structures of native and inactivated cis-3-chloroacrylic acid dehalogenase. Structural basis for substrate specificity and inactivation by (R)-oxirane-2-carboxylate. <i>Journal of Biological Chemistry</i> , <b>2007</b> , 282, 2440-9	5.4	33
50	The roles of active-site residues in the catalytic mechanism of trans-3-chloroacrylic acid dehalogenase: a kinetic, NMR, and mutational analysis. <i>Biochemistry</i> , <b>2004</b> , 43, 4082-91	3.2	33
49	Stereospecific ketonization of 2-hydroxymuconate by 4-oxalocrotonate tautomerase and 5-(carboxymethyl)-2-hydroxymuconate isomerase. <i>Journal of the American Chemical Society</i> , <b>1992</b> , 114, 10104-10110	16.4	33
48	Inactivation of 4-oxalocrotonate tautomerase by 2-oxo-3-pentynoate. <i>Biochemistry</i> , <b>1997</b> , 36, 15724-32	3.2	31
47	The crystal structure of YdcE, a 4-oxalocrotonate tautomerase homologue from <i>Escherichia coli</i> , confirms the structural basis for oligomer diversity. <i>Biochemistry</i> , <b>2002</b> , 41, 12010-24	3.2	30
46	The hydratase activity of malonate semialdehyde decarboxylase: mechanistic and evolutionary implications. <i>Journal of the American Chemical Society</i> , <b>2004</b> , 126, 15658-9	16.4	27
45	Evolution of enzymatic activity in the tautomerase superfamily: mechanistic and structural consequences of the L8R mutation in 4-oxalocrotonate tautomerase. <i>Biochemistry</i> , <b>2006</b> , 45, 7700-8	3.2	25
44	Kinetic and structural characterization of a heterohexamer 4-oxalocrotonate tautomerase from <i>Chloroflexus aurantiacus</i> J-10-fl: implications for functional and structural diversity in the tautomerase superfamily. <i>Biochemistry</i> , <b>2010</b> , 49, 5016-27	3.2	23
43	Mechanism of the phenylpyruvate tautomerase activity of macrophage migration inhibitory factor: properties of the P1G, P1A, Y95F, and N97A mutants. <i>Biochemistry</i> , <b>2000</b> , 39, 9671-8	3.2	23
42	Kinetic and stereochemical analysis of YwhB, a 4-oxalocrotonate tautomerase homologue in <i>Bacillus subtilis</i> : mechanistic implications for the YwhB- and 4-oxalocrotonate tautomerase-catalyzed reactions. <i>Biochemistry</i> , <b>2007</b> , 46, 11919-29	3.2	20
41	A global view of structure-function relationships in the tautomerase superfamily. <i>Journal of Biological Chemistry</i> , <b>2018</b> , 293, 2342-2357	5.4	19
40	Crystal structures of the wild-type, P1A mutant, and inactivated malonate semialdehyde decarboxylase: a structural basis for the decarboxylase and hydratase activities. <i>Biochemistry</i> , <b>2005</b> , 44, 14818-27	3.2	19
39	Stereospecific alkylation of cis-3-chloroacrylic acid dehalogenase by (R)-oxirane-2-carboxylate: analysis and mechanistic implications. <i>Biochemistry</i> , <b>2004</b> , 43, 7187-96	3.2	19
38	Stereochemical and Isotopic Labeling Studies of 4-Oxalocrotonate Decarboxylase and Vinylpyruvate Hydratase: Analysis and Mechanistic Implications. <i>Journal of the American Chemical Society</i> , <b>1994</b> , 116, 10403-10411	16.4	19
37	Reaction of cis-3-chloroacrylic acid dehalogenase with an allene substrate, 2,3-butadienoate: hydration via an enamine. <i>Journal of the American Chemical Society</i> , <b>2012</b> , 134, 293-304	16.4	18
36	Phenylpyruvate tautomerase activity of trans-3-chloroacrylic acid dehalogenase: evidence for an enol intermediate in the dehalogenase reaction?. <i>Biochemistry</i> , <b>2007</b> , 46, 9596-604	3.2	18
35	Characterization of Cg10062 from <i>Corynebacterium glutamicum</i> : implications for the evolution of cis-3-chloroacrylic acid dehalogenase activity in the tautomerase superfamily. <i>Biochemistry</i> , <b>2008</b> , 47, 8139-47	3.2	17

34	4-Oxalocrotonate tautomerase, a 41-kDa homo-hexamer: backbone and side-chain resonance assignments, solution secondary structure, and location of active site residues by heteronuclear NMR spectroscopy. <i>Protein Science</i> , <b>1996</b> , 5, 729-41	6.3	17
33	Chemical and enzymic ketonization of 5-(carboxymethyl)-2-hydroxymuconate. <i>Journal of the American Chemical Society</i> , <b>1993</b> , 115, 3533-3542	16.4	15
32	Kinetic, crystallographic, and mechanistic characterization of TomN: elucidation of a function for a 4-oxalocrotonate tautomerase homologue in the tomaymycin biosynthetic pathway. <i>Biochemistry</i> , <b>2011</b> , 50, 7600-11	3.2	14
31	Inactivation of malonate semialdehyde decarboxylase by 3-halopropiolates: evidence for hydratase activity. <i>Biochemistry</i> , <b>2005</b> , 44, 9375-81	3.2	14
30	A kinetic and stereochemical investigation of the role of lysine-32 in the phenylpyruvate tautomerase activity catalyzed by macrophage migration inhibitory factor. <i>Biochemistry</i> , <b>1999</b> , 38, 16024-33	3.2	14
29	Expression and stereochemical and isotope effect studies of active 4-oxalocrotonate decarboxylase. <i>Biochemistry</i> , <b>2000</b> , 39, 718-26	3.2	13
28	A pre-steady state kinetic analysis of the M60W mutant of trans-3-chloroacrylic acid dehalogenase: implications for the mechanism of the wild-type enzyme. <i>Biochemistry</i> , <b>2012</b> , 51, 9420-35	3.2	11
27	Reactions of 4-oxalocrotonate tautomerase and YwhB with 3-halopropiolates: analysis and implications. <i>Biochemistry</i> , <b>2004</b> , 43, 748-58	3.2	11
26	Pre-steady-state kinetic analysis of cis-3-chloroacrylic acid dehalogenase: analysis and implications. <i>Biochemistry</i> , <b>2009</b> , 48, 11737-44	3.2	9
25	The Contribution of the Substrate's Carboxylate Group to the Mechanism of 4-Oxalocrotonate Tautomerase. <i>Bioorganic Chemistry</i> , <b>1998</b> , 26, 141-156	5.1	9
24	Laccase removal of 2-chlorophenol and sulfamethoxazole in municipal wastewater. <i>Water Environment Research</i> , <b>2019</b> , 91, 281-291	2.8	8
23	Identification and characterization of new family members in the tautomerase superfamily: analysis and implications. <i>Archives of Biochemistry and Biophysics</i> , <b>2014</b> , 564, 189-96	4.1	8
22	Reactions of Cg10062, a cis-3-Chloroacrylic Acid Dehalogenase Homologue, with Acetylene and Allene Substrates: Evidence for a Hydration-Dependent Decarboxylation. <i>Biochemistry</i> , <b>2015</b> , 54, 3009-23	3.2	6
21	Kinetic and structural characterization of a cis-3-Chloroacrylic acid dehalogenase homologue in <i>Pseudomonas</i> sp. UW4: A potential step between subgroups in the tautomerase superfamily. <i>Archives of Biochemistry and Biophysics</i> , <b>2017</b> , 636, 50-56	4.1	6
20	Crystal structures of native and inactivated cis-3-chloroacrylic acid dehalogenase: Implications for the catalytic and inactivation mechanisms. <i>Bioorganic Chemistry</i> , <b>2011</b> , 39, 1-9	5.1	6
19	Structural and kinetic characterization of recombinant 2-hydroxymuconate semialdehyde dehydrogenase from <i>Pseudomonas putida</i> G7. <i>Archives of Biochemistry and Biophysics</i> , <b>2015</b> , 579, 8-17	4.1	4
18	A mutational analysis of the active site loop residues in cis-3-Chloroacrylic acid dehalogenase. <i>Biochemistry</i> , <b>2013</b> , 52, 4204-16	3.2	4
17	Kinetic, mutational, and structural analysis of malonate semialdehyde decarboxylase from <i>Corynebacterium</i> strain FG41: mechanistic implications for the decarboxylase and hydratase activities. <i>Biochemistry</i> , <b>2013</b> , 52, 4830-41	3.2	4

16	Structural Characterization of the Hydratase-Aldolases, NahE and PhdJ: Implications for the Specificity, Catalysis, and N-Acetylneuraminate Lyase Subgroup of the Aldolase Superfamily. <i>Biochemistry</i> , <b>2018</b> , 57, 3524-3536	3.2	4
15	A mutational analysis of active site residues in trans-3-chloroacrylic acid dehalogenase. <i>FEBS Letters</i> , <b>2013</b> , 587, 2842-50	3.8	3
14	Crystal Structures of Apo and Liganded 4-Oxalocrotonate Decarboxylase Uncover a Structural Basis for the Metal-Assisted Decarboxylation of a Vinylogous $\beta$ -Keto Acid. <i>Biochemistry</i> , <b>2016</b> , 55, 2632-45	3.2	3
13	Resolution of the uncertainty in the kinetic mechanism for the trans-3-Chloroacrylic acid dehalogenase-catalyzed reaction. <i>Archives of Biochemistry and Biophysics</i> , <b>2017</b> , 623-624, 9-19	4.1	2
12	Inactivation of 4-Oxalocrotonate Tautomerase by 5-Halo-2-hydroxy-2,4-pentadienoates. <i>Biochemistry</i> , <b>2018</b> , 57, 1012-1021	3.2	2
11	Preparation of dihydroxy polycyclic aromatic hydrocarbons and activities of two dioxygenases in the phenanthrene degradative pathway. <i>Archives of Biochemistry and Biophysics</i> , <b>2019</b> , 673, 108081	4.1	2
10	Kinetic and structural characterization of Dmpt from <i>Helicobacter pylori</i> and <i>Archaeoglobus fulgidus</i> , two 4-oxalocrotonate tautomerase family members. <i>Bioorganic Chemistry</i> , <b>2010</b> , 38, 252-9	5.1	2
9	Structural and mechanistic analysis of trans-3-chloroacrylic acid dehalogenase activity. <i>Acta Crystallographica Section D: Biological Crystallography</i> , <b>2008</b> , 64, 1277-82		2
8	Stereochemical Consequences of Vinylpyruvate Hydratase-Catalyzed Reactions. <i>Biochemistry</i> , <b>2016</b> , 55, 4055-64	3.2	2
7	Structural, Kinetic, and Mechanistic Analysis of an Asymmetric 4-Oxalocrotonate Tautomerase Trimer. <i>Biochemistry</i> , <b>2019</b> , 58, 2617-2627	3.2	1
6	Structural Basis for the Asymmetry of a 4-Oxalocrotonate Tautomerase Trimer. <i>Biochemistry</i> , <b>2020</b> , 59, 1592-1603	3.2	1
5	Synthesis and enzymatic ketonization of the 5-(halo)-2-hydroxymuconates and 5-(halo)-2-hydroxy-2,4-pentadienoates. <i>Beilstein Journal of Organic Chemistry</i> , <b>2017</b> , 13, 1022-1031	2.5	1
4	Structural and kinetic characterization of two 4-oxalocrotonate tautomerase in <i>Methylobium petroleophilum</i> strain PM1. <i>Archives of Biochemistry and Biophysics</i> , <b>2013</b> , 537, 113-24	4.1	1
3	The Birth of Genomic Enzymology: Discovery of the Mechanistically Diverse Enolase Superfamily. <i>Biochemistry</i> , <b>2021</b> , 60, 3515-3528	3.2	1
2	Kinetic and Structural Analysis of Two Linkers in the Tautomerase Superfamily: Analysis and Implications. <i>Biochemistry</i> , <b>2021</b> , 60, 1776-1786	3.2	1
1	The bacterial catabolism of polycyclic aromatic hydrocarbons: Characterization of three hydratase-aldolase-catalyzed reactions. <i>Perspectives in Science</i> , <b>2016</b> , 9, 33-41	0.8	1