Christian P Whitman

List of Publications by Year in Descending Order

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	The Birth of Genomic Enzymology: Discovery of the Mechanistically Diverse Enolase Superfamily. *Biochemistry*, **2021**, 60, 3515-3528	3.2	1
68	Kinetic and Structural Analysis of Two Linkers in the Tautomerase Superfamily: Analysis and Implications. *Biochemistry*, **2021**, 60, 1776-1786	3.2	1
67	Structural Basis for the Asymmetry of a 4-Oxalocrotonate Tautomerase Trimer. *Biochemistry*, **2020**, 59, 1592-1603	3.2	1
66	Structural, Kinetic, and Mechanistic Analysis of an Asymmetric 4-Oxalocrotonate Tautomerase Trimer. *Biochemistry*, **2019**, 58, 2617-2627	3.2	1
65	Laccase removal of 2-chlorophenol and sulfamethoxazole in municipal wastewater. *Water Environment Research*, **2019**, 91, 281-291	2.8	8
64	Preparation of dihydroxy polycyclic aromatic hydrocarbons and activities of two dioxygenases in the phenanthrene degradative pathway. *Archives of Biochemistry and Biophysics*, **2019**, 673, 108081	4.1	2
63	A global view of structure-function relationships in the tautomerase superfamily. *Journal of Biological Chemistry*, **2018**, 293, 2342-2357	5.4	19
62	Inactivation of 4-Oxalocrotonate Tautomerase by 5-Halo-2-hydroxy-2,4-pentadienoates. *Biochemistry*, **2018**, 57, 1012-1021	3.2	2
61	Structural Characterization of the Hydratase-Aldolases, NahE and PhdJ: Implications for the Specificity, Catalysis, and N-Acetylneuraminate Lyase Subgroup of the Aldolase Superfamily. *Biochemistry*, **2018**, 57, 3524-3536	3.2	4
60	Resolution of the uncertainty in the kinetic mechanism for the trans-3-Chloroacrylic acid dehalogenase-catalyzed reaction. *Archives of Biochemistry and Biophysics*, **2017**, 623-624, 9-19	4.1	2
59	Synthesis and enzymatic ketonization of the 5-(halo)-2-hydroxymuconates and 5-(halo)-2-hydroxy-2,4-pentadienoates. *Beilstein Journal of Organic Chemistry*, **2017**, 13, 1022-1031	2.5	1
58	Kinetic and structural characterization of a cis-3-Chloroacrylic acid dehalogenase homologue in Pseudomonas sp. UW4: A potential step between subgroups in the tautomerase superfamily. *Archives of Biochemistry and Biophysics*, **2017**, 636, 50-56	4.1	6
57	Stereochemical Consequences of Vinylpyruvate Hydratase-Catalyzed Reactions. *Biochemistry*, **2016**, 55, 4055-64	3.2	2
56	Crystal Structures of Apo and Liganded 4-Oxalocrotonate Decarboxylase Uncover a Structural Basis for the Metal-Assisted Decarboxylation of a Vinylogous β-Keto Acid. *Biochemistry*, **2016**, 55, 2632-45	3.2	3
55	The bacterial catabolism of polycyclic aromatic hydrocarbons: Characterization of three hydratase-aldolase-catalyzed reactions. *Perspectives in Science*, **2016**, 9, 33-41	0.8	1
54	Structural and kinetic characterization of recombinant 2-hydroxymuconate semialdehyde dehydrogenase from Pseudomonas putida G7. *Archives of Biochemistry and Biophysics*, **2015**, 579, 8-17	4.1	4
53	Reactions of Cg10062, a cis-3-Chloroacrylic Acid Dehalogenase Homologue, with Acetylene and Allene Substrates: Evidence for a Hydration-Dependent Decarboxylation. *Biochemistry*, **2015**, 54, 3009-23	3.2	6

52	Identification and characterization of new family members in the tautomerase superfamily: analysis and implications. *Archives of Biochemistry and Biophysics*, **2014**, 564, 189-96	4.1	8
51	Structural and kinetic characterization of two 4-oxalocrotonate tautomerases in Methylibium petroleiphilum strain PM1. *Archives of Biochemistry and Biophysics*, **2013**, 537, 113-24	4.1	1
50	A mutational analysis of active site residues in trans-3-chloroacrylic acid dehalogenase. *FEBS Letters* , **2013**, 587, 2842-50	3.8	3
49	A mutational analysis of the active site loop residues in cis-3-Chloroacrylic acid dehalogenase. *Biochemistry*, **2013**, 52, 4204-16	3.2	4
48	Kinetic, mutational, and structural analysis of malonate semialdehyde decarboxylase from Coryneform bacterium strain FG41: mechanistic implications for the decarboxylase and hydratase activities. *Biochemistry*, **2013**, 52, 4830-41	3.2	4
47	A pre-steady state kinetic analysis of the Y60W mutant of trans-3-chloroacrylic acid dehalogenase: implications for the mechanism of the wild-type enzyme. *Biochemistry*, **2012**, 51, 9420-35	3.2	11
46	Reaction of cis-3-chloroacrylic acid dehalogenase with an allene substrate, 2,3-butadienoate: hydration via an enamine. *Journal of the American Chemical Society*, **2012**, 134, 293-304	16.4	18
45	Kinetic, crystallographic, and mechanistic characterization of TomN: elucidation of a function for a 4-oxalocrotonate tautomerase homologue in the tomaymycin biosynthetic pathway. *Biochemistry*, **2011**, 50, 7600-11	3.2	14
44	Crystal structures of native and inactivated cis-3-chloroacrylic acid dehalogenase: Implications for the catalytic and inactivation mechanisms. *Bioorganic Chemistry*, **2011**, 39, 1-9	5.1	6
43	Kinetic and structural characterization of a heterohexamer 4-oxalocrotonate tautomerase from Chloroflexus aurantiacus J-10-fl: implications for functional and structural diversity in the tautomerase superfamily. *Biochemistry*, **2010**, 49, 5016-27	3.2	23
42	Kinetic and structural characterization of DmpI from Helicobacter pylori and Archaeoglobus fulgidus, two 4-oxalocrotonate tautomerase family members. *Bioorganic Chemistry*, **2010**, 38, 252-9	5.1	2
41	Pre-steady-state kinetic analysis of cis-3-chloroacrylic acid dehalogenase: analysis and implications. *Biochemistry*, **2009**, 48, 11737-44	3.2	9
40	Characterization of Cg10062 from Corynebacterium glutamicum: implications for the evolution of cis-3-chloroacrylic acid dehalogenase activity in the tautomerase superfamily. *Biochemistry*, **2008**, 47, 8139-47	3.2	17
39	Structural and mechanistic analysis of trans-3-chloroacrylic acid dehalogenase activity. *Acta Crystallographica Section D: Biological Crystallography*, **2008**, 64, 1277-82		2
38	Phenylpyruvate tautomerase activity of trans-3-chloroacrylic acid dehalogenase: evidence for an enol intermediate in the dehalogenase reaction?. *Biochemistry*, **2007**, 46, 9596-604	3.2	18
37	Kinetic and stereochemical analysis of YwhB, a 4-oxalocrotonate tautomerase homologue in Bacillus subtilis: mechanistic implications for the YwhB- and 4-oxalocrotonate tautomerase-catalyzed reactions. *Biochemistry*, **2007**, 46, 11919-29	3.2	20
36	Crystal structures of native and inactivated cis-3-chloroacrylic acid dehalogenase. Structural basis for substrate specificity and inactivation by (R)-oxirane-2-carboxylate. *Journal of Biological Chemistry*, **2007**, 282, 2440-9	5.4	33
35	Evolution of enzymatic activity in the tautomerase superfamily: mechanistic and structural consequences of the L8R mutation in 4-oxalocrotonate tautomerase. *Biochemistry*, **2006**, 45, 7700-8	3.2	25

34	Inactivation of malonate semialdehyde decarboxylase by 3-halopropiolates: evidence for hydratase activity. *Biochemistry*, **2005**, 44, 9375-81	3.2	14
33	Crystal structures of the wild-type, P1A mutant, and inactivated malonate semialdehyde decarboxylase: a structural basis for the decarboxylase and hydratase activities. *Biochemistry*, **2005**, 44, 14818-27	3.2	19
32	The X-ray structure of trans-3-chloroacrylic acid dehalogenase reveals a novel hydration mechanism in the tautomerase superfamily. *Journal of Biological Chemistry*, **2004**, 279, 11546-52	5.4	38
31	Evolution of enzymatic activity in the tautomerase superfamily: mechanistic and structural studies of the 1,3-dichloropropene catabolic enzymes. *Bioorganic Chemistry*, **2004**, 32, 376-92	5.1	40
30	Reactions of 4-oxalocrotonate tautomerase and YwhB with 3-halopropiolates: analysis and implications. *Biochemistry*, **2004**, 43, 748-58	3.2	11
29	The roles of active-site residues in the catalytic mechanism of trans-3-chloroacrylic acid dehalogenase: a kinetic, NMR, and mutational analysis. *Biochemistry*, **2004**, 43, 4082-91	3.2	33
28	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. *Biochemistry*, **2004**, 43, 759-72	3.2	41
27	Stereospecific alkylation of cis-3-chloroacrylic acid dehalogenase by (R)-oxirane-2-carboxylate: analysis and mechanistic implications. *Biochemistry*, **2004**, 43, 7187-96	3.2	19
26	The hydratase activity of malonate semialdehyde decarboxylase: mechanistic and evolutionary implications. *Journal of the American Chemical Society*, **2004**, 126, 15658-9	16.4	27
25	Reactions of trans-3-chloroacrylic acid dehalogenase with acetylene substrates: consequences of and evidence for a hydration reaction. *Biochemistry*, **2003**, 42, 8762-73	3.2	60
24	The 4-oxalocrotonate tautomerase- and YwhB-catalyzed hydration of 3E-haloacrylates: implications for the evolution of new enzymatic activities. *Journal of the American Chemical Society*, **2003**, 125, 14282-3	16.4	49
23	Mechanistic characterization of a bacterial malonate semialdehyde decarboxylase: identification of a new activity on the tautomerase superfamily. *Journal of Biological Chemistry*, **2003**, 278, 48674-83	5.4	36
22	The crystal structure of YdcE, a 4-oxalocrotonate tautomerase homologue from Escherichia coli, confirms the structural basis for oligomer diversity. *Biochemistry*, **2002**, 41, 12010-24	3.2	30
21	The 4-oxalocrotonate tautomerase family of enzymes: how nature makes new enzymes using a beta-alpha-beta structural motif. *Archives of Biochemistry and Biophysics*, **2002**, 402, 1-13	4.1	95
20	The structural basis for the perturbed pKa of the catalytic base in 4-oxalocrotonate tautomerase: kinetic and structural effects of mutations of Phe-50. *Biochemistry*, **2001**, 40, 1984-95	3.2	65
19	Expression and stereochemical and isotope effect studies of active 4-oxalocrotonate decarboxylase. *Biochemistry*, **2000**, 39, 718-26	3.2	13
18	Mechanism of the phenylpyruvate tautomerase activity of macrophage migration inhibitory factor: properties of the P1G, P1A, Y95F, and N97A mutants. *Biochemistry*, **2000**, 39, 9671-8	3.2	23
17	A kinetic and stereochemical investigation of the role of lysine-32 in the phenylpyruvate tautomerase activity catalyzed by macrophage migration inhibitory factor. *Biochemistry*, **1999**, 38, 16024-33	3.2	14

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16	Crystal structure of macrophage migration inhibitory factor complexed with (E)-2-fluoro-p-hydroxycinnamate at 1.8 A resolution: implications for enzymatic catalysis and inhibition. *Biochemistry*, **1999**, 38, 7444-52	3.2	79
15	Kinetic, stereochemical, and structural effects of mutations of the active site arginine residues in 4-oxalocrotonate tautomerase. *Biochemistry*, **1999**, 38, 12343-57	3.2	62
14	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. *Biochemistry*, **1999**, 38, 12358-66	3.2	46
13	The Contribution of the Substrate's Carboxylate Group to the Mechanism of 4-Oxalocrotonate Tautomerase. *Bioorganic Chemistry*, **1998**, 26, 141-156	5.1	9
12	Crystal structure of 4-oxalocrotonate tautomerase inactivated by 2-oxo-3-pentynoate at 2.4 A resolution: analysis and implications for the mechanism of inactivation and catalysis. *Biochemistry*, **1998**, 37, 14692-700	3.2	70
11	Characterization of the role of the amino-terminal proline in the enzymatic activity catalyzed by macrophage migration inhibitory factor. *Biochemistry*, **1998**, 37, 10195-202	3.2	72
10	Kinetic and structural effects of mutations of the catalytic amino-terminal proline in 4-oxalocrotonate tautomerase. *Biochemistry*, **1997**, 36, 14551-60	3.2	46
9	Inactivation of 4-oxalocrotonate tautomerase by 2-oxo-3-pentynoate. *Biochemistry*, **1997**, 36, 15724-32	3.2	31
8	4-Oxalocrotonate tautomerase: pH dependence of catalysis and pKa values of active site residues. *Biochemistry*, **1996**, 35, 814-23	3.2	116
7	Catalytic role of the amino-terminal proline in 4-oxalocrotonate tautomerase: affinity labeling and heteronuclear NMR studies. *Biochemistry*, **1996**, 35, 803-13	3.2	85
6	4-Oxalocrotonate tautomerase, a 41-kDa homohexamer: backbone and side-chain resonance assignments, solution secondary structure, and location of active site residues by heteronuclear NMR spectroscopy. *Protein Science*, **1996**, 5, 729-41	6.3	17
5	Stereochemical and Isotopic Labeling Studies of 4-Oxalocrotonate Decarboxylase and Vinylpyruvate Hydratase: Analysis and Mechanistic Implications. *Journal of the American Chemical Society*, **1994**, 116, 10403-10411	16.4	19
4	Chemical and enzymic ketonization of 5-(carboxymethyl)-2-hydroxymuconate. *Journal of the American Chemical Society*, **1993**, 115, 3533-3542	16.4	15
3	Stereospecific ketonization of 2-hydroxymuconate by 4-oxalocrotonate tautomerase and 5-(carboxymethyl)-2-hydroxymuconate isomerase. *Journal of the American Chemical Society*, **1992**, 114, 10104-10110	16.4	33
2	Chemical and enzymic ketonization of 2-hydroxymuconate, a conjugated enol. *Journal of the American Chemical Society*, **1991**, 113, 3154-3162	16.4	112
1	Absolute stereochemical course of the 3-carboxymuconate cycloisomerases from Pseudomonas putida and Acinetobacter calcoaceticus: analysis and implications. *Journal of the American Chemical Society*, **1987**, 109, 5514-5519	16.4	34