

Michael W Crowder

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/3898101/publications.pdf>

Version: 2024-02-01

106
papers

4,224
citations

94433

37
h-index

123424

61
g-index

109
all docs

109
docs citations

109
times ranked

2902
citing authors

#	ARTICLE	IF	CITATIONS
1	Metallo- β -lactamases: A Novel Weaponry for Antibiotic Resistance in Bacteria. <i>Accounts of Chemical Research</i> , 2006, 39, 721-728.	15.6	361
2	Hydrolysis of phosphate monoesters: a biological problem with multiple chemical solutions. <i>Trends in Biochemical Sciences</i> , 1992, 17, 105-110.	7.5	310
3	Overexpression, Purification, and Characterization of the Cloned Metallo- β -Lactamase L1 from <i>Stenotrophomonas maltophilia</i> . <i>Antimicrobial Agents and Chemotherapy</i> , 1998, 42, 921-926.	3.2	181
4	Dipicolinic Acid Derivatives as Inhibitors of New Delhi Metallo- β -lactamase-1. <i>Journal of Medicinal Chemistry</i> , 2017, 60, 7267-7283.	6.4	120
5	Structure and metal binding properties of ZnuA, a periplasmic zinc transporter from <i>Escherichia coli</i> . <i>Journal of Biological Inorganic Chemistry</i> , 2008, 13, 271-288.	2.6	116
6	The Continuing Challenge of Metallo- β -Lactamase Inhibition: Mechanism Matters. <i>Trends in Pharmacological Sciences</i> , 2018, 39, 635-647.	8.7	113
7	Purple acid phosphatase: a diiron enzyme that catalyzes a direct phospho group transfer to water. <i>Journal of the American Chemical Society</i> , 1993, 115, 2974-2975.	13.7	103
8	Kinetic Mechanism of Metallo- β -lactamase L1 from <i>Stenotrophomonas maltophilia</i> . <i>Biochemistry</i> , 1999, 38, 1547-1553.	2.5	100
9	A general reaction mechanism for carbapenem hydrolysis by mononuclear and binuclear metallo- β -lactamases. <i>Nature Communications</i> , 2017, 8, 538.	12.8	98
10	Mechanistic and Spectroscopic Studies of Metallo- β -lactamase NDM-1. <i>Biochemistry</i> , 2012, 51, 3839-3847.	2.5	94
11	Mutational Analysis of Metallo- β -lactamase CcrA from <i>Bacteroides fragilis</i> . <i>Biochemistry</i> , 2000, 39, 11330-11339.	2.5	91
12	Arabidopsis Glyoxalase II Contains a Zinc/Iron Binuclear Metal Center That Is Essential for Substrate Binding and Catalysis. <i>Journal of Biological Chemistry</i> , 2001, 276, 4788-4795.	3.4	85
13	Flexible Metal Binding of the Metallo- β -lactamase Domain: Glyoxalase II Incorporates Iron, Manganese, and Zinc in Vivo. <i>Biochemistry</i> , 2003, 42, 11777-11786.	2.5	82
14	Characterization of Chromodulin by X-ray Absorption and Electron Paramagnetic Resonance Spectroscopies and Magnetic Susceptibility Measurements. <i>Journal of the American Chemical Society</i> , 2003, 125, 774-780.	13.7	80
15	Structural Studies on a Mitochondrial Glyoxalase II. <i>Journal of Biological Chemistry</i> , 2005, 280, 40668-40675.	3.4	79
16	Evolution of New Delhi metallo- β -lactamase (NDM) in the clinic: Effects of NDM mutations on stability, zinc affinity, and mono-zinc activity. <i>Journal of Biological Chemistry</i> , 2018, 293, 12606-12618.	3.4	79
17	Direct Evidence That the Reaction Intermediate of Metallo- β -lactamase L1 Is Metal Bound. <i>Biochemistry</i> , 2005, 44, 1078-1087.	2.5	77
18	Role of the Zn ¹ and Zn ² sites in Metallo- β -lactamase L1. <i>Journal of the American Chemical Society</i> , 2008, 130, 14207-14216.	13.7	67

#	ARTICLE	IF	CITATIONS
19	Spectroscopic and Mechanistic Studies of Heterodimetallic Forms of Metallo- β -lactamase NDM-1. Journal of the American Chemical Society, 2014, 136, 7273-7285.	13.7	60
20	Diaryl- β -substituted Azolylthioacetamides: Inhibitor Discovery of New Delhi Metallo- β -lactamase-1 (NDM-1). ChemMedChem, 2014, 9, 2445-2448.	3.2	60
21	Glyoxalase II from <i>A. thaliana</i> requires Zn(II) for catalytic activity. FEBS Letters, 1997, 418, 351-354.	2.8	57
22	Biochemical, Mechanistic, and Spectroscopic Characterization of Metallo- β -lactamase VIM-2. Biochemistry, 2014, 53, 7321-7331.	2.5	57
23	Metal Binding Asp-120 in Metallo- β -lactamase L1 from <i>Stenotrophomonas maltophilia</i> Plays a Crucial Role in Catalysis. Journal of Biological Chemistry, 2004, 279, 920-927.	3.4	56
24	Spectroscopic Studies on Cobalt(II)-Substituted Metallo- β -lactamase ImiS from <i>Aeromonas veronii</i> bv. <i>sobria</i> . Biochemistry, 2005, 44, 5168-5176.	2.5	55
25	Mechanistic Studies on the Mononuclear ZnII-Containing Metallo- β -lactamase ImiS from <i>Aeromonas sobria</i> . Biochemistry, 2006, 45, 10729-10738.	2.5	55
26	Low-molecular-weight chromium-binding substance and biomimetic $[\text{Cr}_3\text{O}(\text{O}_2\text{CCH}_2\text{CH}_3)_6(\text{H}_2\text{O})_3]^+$ do not cleave DNA under physiologically-relevant conditions. Polyhedron, 1999, 18, 2617-2624.	2.2	54
27	Transcriptional Response of <i>Escherichia coli</i> to TPEN. Journal of Bacteriology, 2006, 188, 6709-6713.	2.2	53
28	N-Heterocyclic dicarboxylic acids: Broad-spectrum inhibitors of metallo- β -lactamases with co-antibacterial effect against antibiotic-resistant bacteria. Bioorganic and Medicinal Chemistry Letters, 2012, 22, 5185-5189.	2.2	53
29	Over-expression, purification, and characterization of metallo- β -lactamase ImiS from <i>Aeromonas veronii</i> bv. <i>sobria</i> . Protein Expression and Purification, 2004, 36, 272-279.	1.3	50
30	Clinical Variants of New Delhi Metallo- β -Lactamase Are Evolving To Overcome Zinc Scarcity. ACS Infectious Diseases, 2017, 3, 927-940.	3.8	49
31	Probing the Interaction of Aspergillomarasmine A with Metallo- β -lactamases NDM-1, VIM-2, and IMP-7. ACS Infectious Diseases, 2018, 4, 135-145.	3.8	48
32	The binding of iron and zinc to glyoxalase II occurs exclusively as di-metal centers and is unique within the metallo- β -lactamase family. Journal of Biological Inorganic Chemistry, 2004, 9, 429-438.	2.6	46
33	Characterization of Zn(II)-responsive ribosomal proteins YkgM and L31 in <i>E. coli</i> . Journal of Inorganic Biochemistry, 2012, 111, 164-172.	3.5	45
34	Differential Binding of Co(II) and Zn(II) to Metallo- β -Lactamase Bla2 from <i>Bacillus anthracis</i> . Journal of the American Chemical Society, 2009, 131, 10753-10762.	13.7	44
35	Structural and Kinetic Studies on Metallo- β -lactamase IMP-1. Biochemistry, 2011, 50, 9125-9134.	2.5	42
36	Sequential Binding of Cobalt(II) to Metallo- β -lactamase CcrA. Biochemistry, 2006, 45, 1313-1320.	2.5	41

#	ARTICLE	IF	CITATIONS
37	Site-selective binding of Zn(II) to metallo- β -lactamase L1 from <i>Stenotrophomonas maltophilia</i> . Journal of Biological Inorganic Chemistry, 2006, 11, 351-358.	2.6	41
38	Metal Content of Metallo- β -lactamase L1 Is Determined by the Bioavailability of Metal Ions. Biochemistry, 2008, 47, 7947-7953.	2.5	38
39	A Five-coordinate Metal Center in Co(II)-substituted VanX. Journal of Biological Chemistry, 2005, 280, 11074-11081.	3.4	36
40	Characterization of Monomeric L1 Metallo- β -lactamase and the Role of the N-terminal Extension in Negative Cooperativity and Antibiotic Hydrolysis. Journal of Biological Chemistry, 2002, 277, 24744-24752.	3.4	33
41	Motion of the Zinc Ions in Catalysis by a Dizinc Metallo- β -Lactamase. Journal of the American Chemical Society, 2009, 131, 11642-11643.	13.7	33
42	Zn(II) Binding to <i>Escherichia coli</i> 70S Ribosomes. Biochemistry, 2011, 50, 9937-9939.	2.5	33
43	Spectroscopic Studies on the Designed Metal-Binding Sites of the 43C9 Single Chain Antibody. Journal of the American Chemical Society, 1995, 117, 5627-5634.	13.7	31
44	Probing the Dynamics of a Mobile Loop above the Active Site of L1, a Metallo- β -lactamase from <i>Stenotrophomonas maltophilia</i> , via Site-directed Mutagenesis and Stopped-flow Fluorescence Spectroscopy. Journal of Biological Chemistry, 2004, 279, 39663-39670.	3.4	31
45	Phosphoramidate and phosphothioate dipeptides as potential inhibitors of VanX. Bioorganic and Medicinal Chemistry Letters, 2000, 10, 1085-1087.	2.2	30
46	Inhibition Studies on the Metallo- β -lactamase L1 from <i>Stenotrophomonas maltophilia</i> . Archives of Biochemistry and Biophysics, 1999, 368, 1-6.	3.0	29
47	The problem of a solvent exposable disulfide when preparing Co(II)-substituted metallo- β -lactamase L1 from <i>Stenotrophomonas maltophilia</i> . Journal of Biological Inorganic Chemistry, 2001, 6, 91-99.	2.6	27
48	Homo-cysteinyl peptide inhibitors of the L1 metallo- β -lactamase, and SAR as determined by combinatorial library synthesis. Bioorganic and Medicinal Chemistry Letters, 2006, 16, 5169-5175.	2.2	26
49	Investigating the position of the hairpin loop in New Delhi metallo- β -lactamase, NDM-1, during catalysis and inhibitor binding. Journal of Inorganic Biochemistry, 2016, 156, 35-39.	3.5	26
50	Molecular dynamic simulations of the metallo-beta-lactamase from <i>Bacteroides fragilis</i> in the presence and absence of a tight-binding inhibitor. Journal of Molecular Modeling, 2009, 15, 133-45.	1.8	23
51	Absence of ZnuABC-mediated zinc uptake affects virulence-associated phenotypes of uropathogenic <i>Escherichia coli</i> Δ CFT073 under Zn(II)-depleted conditions. FEMS Microbiology Letters, 2009, 300, 36-41.	1.8	23
52	New β -phospholactam as a carbapenem transition state analog: Synthesis of a broad-spectrum inhibitor of metallo- β -lactamases. Bioorganic and Medicinal Chemistry Letters, 2013, 23, 5855-5859.	2.2	23
53	Visualizing the Dynamic Metalation State of New Delhi Metallo- β -lactamase-1 in Bacteria Using a Reversible Fluorescent Probe. Journal of the American Chemical Society, 2021, 143, 8314-8323.	13.7	22
54	Time-dependent translational response of <i>E. coli</i> to excess Zn(II). Journal of Biomolecular Techniques, 2006, 17, 303-7.	1.5	22

#	ARTICLE	IF	CITATIONS
55	A Symmetry POGIL Activity for Inorganic Chemistry. <i>Journal of Chemical Education</i> , 2012, 89, 211-214.	2.3	20
56	Investigation of Dipicolinic Acid Isosteres for the Inhibition of Metallo- β -Lactamases. <i>ChemMedChem</i> , 2019, 14, 1271-1282.	3.2	20
57	DNA nicking by a trinuclear chromium complex. <i>Inorganica Chimica Acta</i> , 1998, 268, 211-219.	2.4	19
58	Capillary electrophoresis of phosphoamino acids with indirect photometric detection. <i>Analytica Chimica Acta</i> , 1999, 384, 127-133.	5.4	19
59	Probing the mechanisms of inhibition for various inhibitors of metallo- β -lactamases VIM-2 and NDM-1. <i>Journal of Inorganic Biochemistry</i> , 2020, 210, 111123.	3.5	19
60	In vivo folding of recombinant metallo- β -lactamase L1 requires the presence of Zn(II). <i>Protein Science</i> , 2004, 13, 2236-2243.	7.6	18
61	Conformational dynamics of metallo- β -lactamase CcrA during catalysis investigated by using DEER spectroscopy. <i>Journal of Biological Inorganic Chemistry</i> , 2015, 20, 585-594.	2.6	18
62	Discovery of 1-hydroxypyridine-2(1 <i>H</i>)-thione-6-carboxylic Acid as a First-in-Class Low-Cytotoxic Nanomolar Metallo- β -Lactamase Inhibitor. <i>ChemMedChem</i> , 2017, 12, 845-849.	3.2	18
63	Phosphinate, sulfonate, and sulfonamidate dipeptides as potential inhibitors of Escherichia coli aminopeptidase N. <i>Bioorganic and Medicinal Chemistry Letters</i> , 2005, 15, 5150-5153.	2.2	17
64	Conformational Changes in the Metallo- β -lactamase ImiS During the Catalytic Reaction: An EPR Spectrokinetic Study of Co(II)-Spin Label Interactions. <i>Journal of the American Chemical Society</i> , 2008, 130, 8215-8222.	13.7	17
65	Iminodiacetic Acid as a Novel Metal-Binding Pharmacophore for New Delhi Metallo- β -Lactamase Inhibitor Development. <i>ChemMedChem</i> , 2020, 15, 1272-1282.	3.2	17
66	Continuous Assay for VanX, the d-Alanyl-d-Alanine Dipeptidase Required for High-Level Vancomycin Resistance. <i>Analytical Biochemistry</i> , 1999, 272, 94-99.	2.4	16
67	Probing the Reaction Mechanism of the d-Ala-d-Ala Dipeptidase, VanX, by Using Stopped-Flow Kinetic and Rapid-Freeze Quench EPR Studies on the Co(II)-Substituted Enzyme. <i>Journal of the American Chemical Society</i> , 2006, 128, 13050-13051.	13.7	16
68	Spectroscopic studies on Arabidopsis ETHE1, a glyoxalase II-like protein. <i>Journal of Inorganic Biochemistry</i> , 2008, 102, 1825-1830.	3.5	16
69	A Single Salt Bridge in VIM-20 Increases Protein Stability and Antibiotic Resistance under Low-Zinc Conditions. <i>MBio</i> , 2019, 10, .	4.1	16
70	1,2,4-Triazole-3-thione compounds with a 4-ethyl alkyl/aryl sulfide substituent are broad-spectrum metallo- β -lactamase inhibitors with re-sensitization activity. <i>European Journal of Medicinal Chemistry</i> , 2021, 226, 113873.	5.5	16
71	Folding strategy to prepare Co(II)-substituted metallo- β -lactamase L1. <i>Analytical Biochemistry</i> , 2008, 378, 177-183.	2.4	14
72	Carbapenem Use Is Driving the Evolution of Imipenemase 1 Variants. <i>Antimicrobial Agents and Chemotherapy</i> , 2021, 65, .	3.2	13

#	ARTICLE	IF	CITATIONS
73	Fractionation of soluble proteins in <i>Escherichia coli</i> using DEAE-, SP-, and phenyl sepharose chromatographies. <i>Journal of Biomolecular Techniques</i> , 2004, 15, 199-207.	1.5	13
74	A novel fluorogenic substrate for dinuclear Zn(II)-containing metallo- β -lactamases. <i>Bioorganic and Medicinal Chemistry Letters</i> , 2013, 23, 1676-1679.	2.2	12
75	Raman Spectra of Interchanging β -Lactamase Inhibitor Intermediates on the Millisecond Time Scale. <i>Journal of the American Chemical Society</i> , 2013, 135, 2895-2898.	13.7	12
76	Elusive structural changes of New Delhi metallo- β -lactamase revealed by ultraviolet photodissociation mass spectrometry. <i>Chemical Science</i> , 2020, 11, 8999-9010.	7.4	12
77	Over-expression, purification, and characterization of aminopeptidase N from <i>Escherichia coli</i> . <i>Protein Expression and Purification</i> , 2006, 47, 634-639.	1.3	11
78	Probing the adaptive response of <i>Escherichia coli</i> to extracellular Zn(II). <i>BioMetals</i> , 2006, 19, 461-471.	4.1	11
79	Metal Ion Dependence of the Matrix Metalloproteinase-1 Mechanism. <i>Biochemistry</i> , 2015, 54, 3631-3639.	2.5	11
80	Meropenem and Chromacef Intermediates Observed in IMP-25 Metallo- β -Lactamase-Catalyzed Hydrolysis. <i>Antimicrobial Agents and Chemotherapy</i> , 2015, 59, 4326-4330.	3.2	11
81	A Noncanonical Metal Center Drives the Activity of the <i>Sediminispirochaeta smaragdinae</i> Metallo- β -lactamase SPS-1. <i>Biochemistry</i> , 2018, 57, 5218-5229.	2.5	11
82	The metal ion requirements of <i>Arabidopsis thaliana</i> Glx2-2 for catalytic activity. <i>Journal of Biological Inorganic Chemistry</i> , 2010, 15, 249-258.	2.6	9
83	Novel fluorescent risedronates: Synthesis, photodynamic inactivation and imaging of <i>Bacillus subtilis</i> . <i>Bioorganic and Medicinal Chemistry Letters</i> , 2013, 23, 949-954.	2.2	9
84	Combating Vancomycin Resistance in Bacteria: Targeting the D-ala-D-ala Dipeptidase VanX. <i>Infectious Disorders - Drug Targets</i> , 2006, 6, 147-158.	0.8	8
85	Targeting metallo-carbapenemases via modulation of electronic properties of cephalosporins. <i>Biochemical Journal</i> , 2014, 464, 271-279.	3.7	8
86	Dilution of dipolar interactions in a spin-labeled, multimeric metalloenzyme for DEER studies. <i>Journal of Inorganic Biochemistry</i> , 2014, 136, 40-46.	3.5	8
87	Analysis of Barrel-Aged Kentucky Bourbon Whiskey by Ultrahigh Resolution Mass Spectrometry. <i>Food Analytical Methods</i> , 2020, 13, 2301-2311.	2.6	8
88	MBLinhibitors.com, a Website Resource Offering Information and Expertise for the Continued Development of Metallo- β -Lactamase Inhibitors. <i>Biomolecules</i> , 2020, 10, 459.	4.0	8
89	L-Alanine-p-nitroanilide is not a substrate for VanX. <i>Analytical Biochemistry</i> , 2004, 331, 398-400.	2.4	7
90	What Is the True Color of Fresh Meat? A Biophysical Undergraduate Laboratory Experiment Investigating the Effects of Ligand Binding on Myoglobin Using Optical, EPR, and NMR Spectroscopy. <i>Journal of Chemical Education</i> , 2011, 88, 223-225.	2.3	7

#	ARTICLE	IF	CITATIONS
91	Explaining the inhibition of glyoxalase II by 9-fluorenylmethoxycarbonyl-protected glutathione derivatives. Archives of Biochemistry and Biophysics, 2003, 414, 271-278.	3.0	6
92	Probing substrate binding to the metal binding sites in metallo- β -lactamase L1 during catalysis. MedChemComm, 2016, 7, 194-201.	3.4	6
93	An integrated biophysical approach to discovering mechanisms of NDM-1 inhibition for several thiol-containing drugs. Journal of Biological Inorganic Chemistry, 2020, 25, 717-727.	2.6	6
94	3-Alkoxy-5-isoxazolidinones mimic β -lactams. Biochemical and Biophysical Research Communications, 2003, 311, 267-271.	2.1	5
95	Spectroscopic and biochemical characterization of metallo- β -lactamase IMP-1 with dicarboxylic, sulfonyl, and thiol inhibitors. Bioorganic and Medicinal Chemistry, 2021, 40, 116183.	3.0	5
96	Biochemical characterization and zinc binding group (ZBGs) inhibition studies on the catalytic domain of MMP7 (cdMMP7). Journal of Inorganic Biochemistry, 2016, 165, 7-17.	3.5	4
97	Discovery of an Effective Small-Molecule Allosteric Inhibitor of New Delhi Metallo- β -lactamase (NDM). ACS Infectious Diseases, 2022, 8, 811-824.	3.8	4
98	Analysis of Three Overexpression Systems for VanX, the Zinc(II) Dipeptidase Required for High-Level Vancomycin Resistance in Bacteria. Protein Expression and Purification, 2000, 20, 300-307.	1.3	3
99	A method for removing ethylenediaminetetraacetic acid from apo-proteins. Analytical Biochemistry, 2004, 329, 342-344.	2.4	3
100	Fragment-based screening and hit-based substructure search: Rapid discovery of 8-hydroxyquinoline-7-carboxylic acid as a low-cytotoxic, nanomolar metallo- β -lactamase inhibitor. Chemical Biology and Drug Design, 2021, 98, 481-492.	3.2	3
101	Zn(II) Homeostasis in <i>E. coli</i> . ACS Symposium Series, 2009, , 81-95.	0.5	2
102	Substituent Effects on the Coordination Chemistry of Metal-Binding Pharmacophores. Inorganic Chemistry, 2017, 56, 11721-11728.	4.0	2
103	Purple acid phosphatase catalyzes the direct transfer of a phospho group from substrate to water.. Journal of Inorganic Biochemistry, 1993, 51, 106.	3.5	1
104	Biochemical and spectroscopic characterization of the catalytic domain of MMP16 (cdMMP16). Journal of Biological Inorganic Chemistry, 2016, 21, 523-535.	2.6	1
105	Understanding the Role of Tyrosine 381 in the Activity of E. coli Aminopeptidase N (PepN). FASEB Journal, 2012, 26, 963.8.	0.5	0
106	New Delhi Metallo- β -Lactamase Variants NDM-4 and NDM-12 from E. coli Clinical Isolates Exhibit Increased Activity and Stability. FASEB Journal, 2017, 31, 777.21.	0.5	0