Michael W Crowder

List of Publications by Year
in descending order

106 papers	4,224 citations	37 h-index (94269)	61 g-index (123241)
109 all docs	109 docs citations	109 times ranked	2902 citing authors

#	Article	IF	Citations
1	Discovery of an Effective Small-Molecule Allosteric Inhibitor of New Delhi Metallo-Î²-lactamase (NDM). ACS Infectious Diseases, 2022, 8, 811-824.	1.8	4
2	Carbapenem Use Is Driving the Evolution of Imipenemase 1 Variants. Antimicrobial Agents and Chemotherapy, 2021, 65, .	1.4	13
3	Visualizing the Dynamic Metalation State of New Delhi Metallo-Î²-lactamase-1 in Bacteria Using a Reversible Fluorescent Probe. Journal of the American Chemical Society, 2021, 143, 8314-8323.	6.6	22
4	Spectroscopic and biochemical characterization of metallo-Î²-lactamase IMP-1 with dicarboxylic, sulfonyl, and thiol inhibitors. Bioorganic and Medicinal Chemistry, 2021, 40, 116183.	1.4	5
5	Fragmentâ€based screening and hitâ€based substructure search: Rapid discovery of 8â€hydroxyquinolineâ€7â€carboxylic acid as a lowâ€cytotoxic, nanomolar metallo Î²â€lactamase inhibitor. Chemical Biology and Drug Design, 2021, 98, 481-492.	1.5	3
6	1,2,4-Triazole-3-thione compounds with a 4-ethyl alkyl/aryl sulfide substituent are broad-spectrum metallo-Î²-lactamase inhibitors with re-sensitization activity. European Journal of Medicinal Chemistry, 2021, 226, 113873.	2.6	16
7	Elusive structural changes of New Delhi metallo-Î²-lactamase revealed by ultraviolet photodissociation mass spectrometry. Chemical Science, 2020, 11, 8999-9010.	3.7	12
8	Analysis of Barrel-Aged Kentucky Bourbon Whiskey by Ultrahigh Resolution Mass Spectrometry. Food Analytical Methods, 2020, 13, 2301-2311.	1.3	8
9	Probing the mechanisms of inhibition for various inhibitors of metallo-Î²-lactamases VIM-2 and NDM-1. Journal of Inorganic Biochemistry, 2020, 210, 111123.	1.5	19
10	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.	1.1	6
11	MBLinhibitors.com, a Website Resource Offering Information and Expertise for the Continued Development of Metallo-Î²-Lactamase Inhibitors. Biomolecules, 2020, 10, 459.	1.8	8
12	Iminodiacetic Acid as a Novel Metalâ€Binding Pharmacophore for New Delhi Metalloâ€Î²â€lactamase Inhibitor Development. ChemMedChem, 2020, 15, 1272-1282.	1.6	17
13	Investigation of Dipicolinic Acid Isosteres for the Inhibition of Metalloâ€Î²â€Lactamases. ChemMedChem, 2019, 14, 1271-1282.	1.6	20
14	A Single Salt Bridge in VIM-20 Increases Protein Stability and Antibiotic Resistance under Low-Zinc Conditions. MBio, 2019, 10, .	1.8	16
15	The Continuing Challenge of Metallo-Î²-Lactamase Inhibition: Mechanism Matters. Trends in Pharmacological Sciences, 2018, 39, 635-647.	4.0	113
16	Probing the Interaction of Aspergillomarasmine A with Metallo-Î²-lactamases NDM-1, VIM-2, and IMP-7. ACS Infectious Diseases, 2018, 4, 135-145.	1.8	48
17	A Noncanonical Metal Center Drives the Activity of the <i>Sediminispirochaeta smaragdinae</i> Metallo-Î²-lactamase SPS-1. Biochemistry, 2018, 57, 5218-5229.	1.2	11
18	Evolution of New Delhi metallo-Î²-lactamase (NDM) in the clinic: Effects of NDM mutations on stability, zinc affinity, and mono-zinc activity. Journal of Biological Chemistry, 2018, 293, 12606-12618.	1.6	79

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19	Discovery of 1â€Hydroxypyridineâ€2(1<i>H</i>)â€thioneâ€6â€carboxylic Acid as a Firstâ€inâ€Class Lowâ€Cytotoxic Nanomolar Metallo Î²â€Lactamase Inhibitor. ChemMedChem, 2017, 12, 845-849.	1.6	18
20	Clinical Variants of New Delhi Metallo-Î²-Lactamase Are Evolving To Overcome Zinc Scarcity. ACS Infectious Diseases, 2017, 3, 927-940.	1.8	49
21	Substituent Effects on the Coordination Chemistry of Metal-Binding Pharmacophores. Inorganic Chemistry, 2017, 56, 11721-11728.	1.9	2
22	A general reaction mechanism for carbapenem hydrolysis by mononuclear and binuclear metallo-Î²-lactamases. Nature Communications, 2017, 8, 538.	5.8	98
23	Dipicolinic Acid Derivatives as Inhibitors of New Delhi Metallo-Î²-lactamase-1. Journal of Medicinal Chemistry, 2017, 60, 7267-7283.	2.9	120
24	New Delhi Metalloâ€Betaâ€Lactamase Variants NDMâ€4 and NDMâ€12 from E. coli Clinical Isolates Exhibit Increased Activity and Stability. FASEB Journal, 2017, 31, 777.21.	0.2	0
25	Biochemical characterization and zinc binding group (ZBGs) inhibition studies on the catalytic domain of MMP7 (cdMMP7). Journal of Inorganic Biochemistry, 2016, 165, 7-17.	1.5	4
26	Biochemical and spectroscopic characterization of the catalytic domain of MMP16 (cdMMP16). Journal of Biological Inorganic Chemistry, 2016, 21, 523-535.	1.1	1
27	Probing substrate binding to the metal binding sites in metallo-Î²-lactamase L1 during catalysis. MedChemComm, 2016, 7, 194-201.	3.5	6
28	Investigating the position of the hairpin loop in New Delhi metallo-Î²-lactamase, NDM-1, during catalysis and inhibitor binding. Journal of Inorganic Biochemistry, 2016, 156, 35-39.	1.5	26
29	Metal Ion Dependence of the Matrix Metalloproteinase-1 Mechanism. Biochemistry, 2015, 54, 3631-3639.	1.2	11
30	Meropenem and Chromacef Intermediates Observed in IMP-25 Metallo-Î²-Lactamase-Catalyzed Hydrolysis. Antimicrobial Agents and Chemotherapy, 2015, 59, 4326-4330.	1.4	11
31	Conformational dynamics of metallo-Î²-lactamase CcrA during catalysis investigated by using DEER spectroscopy. Journal of Biological Inorganic Chemistry, 2015, 20, 585-594.	1.1	18
32	Targeting metallo-carbapenemases via modulation of electronic properties of cephalosporins. Biochemical Journal, 2014, 464, 271-279.	1.7	8
33	Biochemical, Mechanistic, and Spectroscopic Characterization of Metallo-Î²-lactamase VIM-2. Biochemistry, 2014, 53, 7321-7331.	1.2	57
34	Spectroscopic and Mechanistic Studies of Heterodimetallic Forms of Metallo-Î²-lactamase NDM-1. Journal of the American Chemical Society, 2014, 136, 7273-7285.	6.6	60
35	Diarylâ€Substituted Azolylthioacetamides: Inhibitor Discovery of New Delhi Metalloâ€Î²â€Lactamaseâ€1 (NDMâ€1). ChemMedChem, 2014, 9, 2445-2448.	1.6	60
36	Dilution of dipolar interactions in a spin-labeled, multimeric metalloenzyme for DEER studies. Journal of Inorganic Biochemistry, 2014, 136, 40-46.	1.5	8

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37	Novel fluorescent risedronates: Synthesis, photodynamic inactivation and imaging of Bacillus subtilis. Bioorganic and Medicinal Chemistry Letters, 2013, 23, 949-954.	1.0	9
38	New Î²-phospholactam as a carbapenem transition state analog: Synthesis of a broad-spectrum inhibitor of metallo-Î²-lactamases. Bioorganic and Medicinal Chemistry Letters, 2013, 23, 5855-5859.	1.0	23
39	A novel fluorogenic substrate for dinuclear Zn(II)-containing metallo-Î²-lactamases. Bioorganic and Medicinal Chemistry Letters, 2013, 23, 1676-1679.	1.0	12
40	Raman Spectra of Interchanging Î²-Lactamase Inhibitor Intermediates on the Millisecond Time Scale. Journal of the American Chemical Society, 2013, 135, 2895-2898.	6.6	12
41	A Symmetry POGIL Activity for Inorganic Chemistry. Journal of Chemical Education, 2012, 89, 211-214.	1.1	20
42	Mechanistic and Spectroscopic Studies of Metallo-Î²-lactamase NDM-1. Biochemistry, 2012, 51, 3839-3847.	1.2	94
43	Characterization of Zn(II)-responsive ribosomal proteins YkgM and L31 in E. coli. Journal of Inorganic Biochemistry, 2012, 111, 164-172.	1.5	45
44	N-Heterocyclic dicarboxylic acids: Broad-spectrum inhibitors of metallo-Î²-lactamases with co-antibacterial effect against antibiotic-resistant bacteria. Bioorganic and Medicinal Chemistry Letters, 2012, 22, 5185-5189.	1.0	53
45	Understanding the Role of Tyrosine 381 in the Activity of E. coli Aminopeptidase N (PepN). FASEB Journal, 2012, 26, 963.8.	0.2	0
46	Structural and Kinetic Studies on Metallo-Î²-lactamase IMP-1. Biochemistry, 2011, 50, 9125-9134.	1.2	42
47	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. Journal of Chemical Education, 2011, 88, 223-225.	1.1	7
48	Zn(II) Binding to <i>Escherichia coli</i> 70S Ribosomes. Biochemistry, 2011, 50, 9937-9939.	1.2	33
49	The metal ion requirements of Arabidopsis thaliana Glx2-2 for catalytic activity. Journal of Biological Inorganic Chemistry, 2010, 15, 249-258.	1.1	9
50	Molecular dynamic simulations of the metallo-beta-lactamase from Bacteroides fragilis in the presence and absence of a tight-binding inhibitor. Journal of Molecular Modeling, 2009, 15, 133-45.	0.8	23
51	Absence of ZnuABC-mediated zinc uptake affects virulence-associated phenotypes of uropathogenic<i>Escherichia coli</i>Ã¢Â€ÂƒCFT073 under Zn(II)-depleted conditions. FEMS Microbiology Letters, 2009, 300, 36-41.	0.7	23
52	Motion of the Zinc Ions in Catalysis by a Dizinc Metallo-Î²-Lactamase. Journal of the American Chemical Society, 2009, 131, 11642-11643.	6.6	33
53	Zn(II) Homeostasis in <i>E. coli</i>. ACS Symposium Series, 2009, , 81-95.	0.5	2
54	Differential Binding of Co(II) and Zn(II) to Metallo-Î²-Lactamase Bla2 from <i>Bacillus anthracis</i>. Journal of the American Chemical Society, 2009, 131, 10753-10762.	6.6	44

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55	Structure and metal binding properties of ZnuA, a periplasmic zinc transporter from Escherichia coli. Journal of Biological Inorganic Chemistry, 2008, 13, 271-288.	1.1	116
56	Spectroscopic studies on Arabidopsis ETHE1, a glyoxalase II-like protein. Journal of Inorganic Biochemistry, 2008, 102, 1825-1830.	1.5	16
57	Folding strategy to prepare Co(II)-substituted metallo-Î²-lactamase L1. Analytical Biochemistry, 2008, 378, 177-183.	1.1	14
58	Metal Content of Metallo-Î²-lactamase L1 Is Determined by the Bioavailability of Metal Ions. Biochemistry, 2008, 47, 7947-7953.	1.2	38
59	Conformational Changes in the Metallo-Î²-lactamase ImiS During the Catalytic Reaction: An EPR Spectrokinetic Study of Co(II)-Spin Label Interactions. Journal of the American Chemical Society, 2008, 130, 8215-8222.	6.6	17
60	Role of the Zn₁and Zn₂sites in Metallo-Î²-lactamase L1. Journal of the American Chemical Society, 2008, 130, 14207-14216.	6.6	67
61	Probing the Reaction Mechanism of thed-ala-d-ala Dipeptidase, VanX, by Using Stopped-Flow Kinetic and Rapid-Freeze Quench EPR Studies on the Co(II)-Substituted Enzyme. Journal of the American Chemical Society, 2006, 128, 13050-13051.	6.6	16
62	Mechanistic Studies on the Mononuclear ZnII-Containing Metallo-Î²-lactamase ImiS from Aeromonas sobria. Biochemistry, 2006, 45, 10729-10738.	1.2	55
63	Sequential Binding of Cobalt(II) to Metallo-Î²-lactamase CcrA. Biochemistry, 2006, 45, 1313-1320.	1.2	41
64	Metallo-Î²-lactamases:â€‰ Novel Weaponry for Antibiotic Resistance in Bacteria. Accounts of Chemical Research, 2006, 39, 721-728.	7.6	361
65	Over-expression, purification, and characterization of aminopeptidase N from Escherichia coli. Protein Expression and Purification, 2006, 47, 634-639.	0.6	11
66	Homo-cysteinyl peptide inhibitors of the L1 metallo-Î²-lactamase, and SAR as determined by combinatorial library synthesis. Bioorganic and Medicinal Chemistry Letters, 2006, 16, 5169-5175.	1.0	26
67	Probing the adaptive response of Escherichia coli to extracellular Zn(II). BioMetals, 2006, 19, 461-471.	1.8	11
68	Site-selective binding of Zn(II) to metallo-Î²-lactamase L1 from Stenotrophomonas maltophilia. Journal of Biological Inorganic Chemistry, 2006, 11, 351-358.	1.1	41
69	Combating Vancomycin Resistance in Bacteria: Targeting the D-ala-D-ala Dipeptidase VanX. Infectious Disorders - Drug Targets, 2006, 6, 147-158.	0.4	8
70	Transcriptional Response of Escherichia coli to TPEN. Journal of Bacteriology, 2006, 188, 6709-6713.	1.0	53
71	Time-dependent translational response of E. coli to excess Zn(II). Journal of Biomolecular Techniques, 2006, 17, 303-7.	0.8	22
72	Phosphinate, sulfonate, and sulfonamidate dipeptides as potential inhibitors of Escherichia coli aminopeptidase N. Bioorganic and Medicinal Chemistry Letters, 2005, 15, 5150-5153.	1.0	17

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73	Structural Studies on a Mitochondrial Glyoxalase II. Journal of Biological Chemistry, 2005, 280, 40668-40675.	1.6	79
74	A Five-coordinate Metal Center in Co(II)-substituted VanX. Journal of Biological Chemistry, 2005, 280, 11074-11081.	1.6	36
75	Spectroscopic Studies on Cobalt(II)-Substituted Metallo-Î²-lactamase ImiS fromAeromonas veroniibv.sobriaâ€. Biochemistry, 2005, 44, 5168-5176.	1.2	55
76	Direct Evidence That the Reaction Intermediate of Metallo-Î²-lactamase L1 Is Metal Boundâ€. Biochemistry, 2005, 44, 1078-1087.	1.2	77
77	Metal Binding Asp-120 in Metallo-Î²-lactamase L1 from Stenotrophomonas maltophilia Plays a Crucial Role in Catalysis. Journal of Biological Chemistry, 2004, 279, 920-927.	1.6	56
78	Probing the Dynamics of a Mobile Loop above the Active Site of L1, a Metallo-Î²-lactamase from Stenotrophomonas maltophilia, via Site-directed Mutagenesis and Stopped-flow Fluorescence Spectroscopy. Journal of Biological Chemistry, 2004, 279, 39663-39670.	1.6	31
79	The binding of iron and zinc to glyoxalase II occurs exclusively as di-metal centers and is unique within the metallo-Î²-lactamase family. Journal of Biological Inorganic Chemistry, 2004, 9, 429-438.	1.1	46
80	A method for removing ethylenediaminetetraacetic acid from apo-proteins. Analytical Biochemistry, 2004, 329, 342-344.	1.1	3
81	l-Alanine-p-nitroanilide is not a substrate for VanX. Analytical Biochemistry, 2004, 331, 398-400.	1.1	7
82	In vivo folding of recombinant metallo-Î²-lactamase L1 requires the presence of Zn(II). Protein Science, 2004, 13, 2236-2243.	3.1	18
83	Over-expression, purification, and characterization of metallo-Î²-lactamase ImiS from Aeromonas veronii bv. sobria. Protein Expression and Purification, 2004, 36, 272-279.	0.6	50
84	Fractionation of soluble proteins in Escherichia coli using DEAE-, SP-, and phenyl sepharose chromatographies. Journal of Biomolecular Techniques, 2004, 15, 199-207.	0.8	13
85	Flexible Metal Binding of the Metallo-Î²-lactamase Domain:Â Glyoxalase II Incorporates Iron, Manganese, and Zinc in Vivoâ€. Biochemistry, 2003, 42, 11777-11786.	1.2	82
86	Characterization of Chromodulin by X-ray Absorption and Electron Paramagnetic Resonance Spectroscopies and Magnetic Susceptibility Measurements. Journal of the American Chemical Society, 2003, 125, 774-780.	6.6	80
87	3-Alkoxy-5-isoxazolidinones mimic Î²-lactams. Biochemical and Biophysical Research Communications, 2003, 311, 267-271.	1.0	5
88	Explaining the inhibition of glyoxalase II by 9-fluorenylmethoxycarbonyl-protected glutathione derivatives. Archives of Biochemistry and Biophysics, 2003, 414, 271-278.	1.4	6
89	Characterization of Monomeric L1 Metallo-Î²-lactamase and the Role of the N-terminal Extension in Negative Cooperativity and Antibiotic Hydrolysis. Journal of Biological Chemistry, 2002, 277, 24744-24752.	1.6	33
90	The problem of a solvent exposable disulfide when preparing Co(II)-substituted metallo-Î²-lactamase L1 from Stenotrophomonas maltophilia. Journal of Biological Inorganic Chemistry, 2001, 6, 91-99.	1.1	27

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91	Arabidopsis Glyoxalase II Contains a Zinc/Iron Binuclear Metal Center That Is Essential for Substrate Binding and Catalysis. Journal of Biological Chemistry, 2001, 276, 4788-4795.	1.6	85
92	Phosphonamidate and phosphothioate dipeptides as potential inhibitors of VanX. Bioorganic and Medicinal Chemistry Letters, 2000, 10, 1085-1087.	1.0	30
93	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.	0.6	3
94	Mutational Analysis of Metallo-Î²-lactamase CcrA from Bacteroides fragilis. Biochemistry, 2000, 39, 11330-11339.	1.2	91
95	Low-molecular-weight chromium-binding substance and biomimetic [Cr3O(O2CCH2CH3)6(H2O)3]+ do not cleave DNA under physiologically-relevant conditions. Polyhedron, 1999, 18, 2617-2624.	1.0	54
96	Capillary electrophoresis of phosphoamino acids with indirect photometric detection. Analytica Chimica Acta, 1999, 384, 127-133.	2.6	19
97	Continuous Assay for VanX, the d-Alanylâ€"d-Alanine Dipeptidase Required for High-Level Vancomycin Resistance. Analytical Biochemistry, 1999, 272, 94-99.	1.1	16
98	Kinetic Mechanism of Metallo-Î²-lactamase L1 from Stenotrophomonas maltophilia. Biochemistry, 1999, 38, 1547-1553.	1.2	100
99	Inhibition Studies on the Metallo-Î²-lactamase L1 from Stenotrophomonas maltophilia. Archives of Biochemistry and Biophysics, 1999, 368, 1-6.	1.4	29
100	DNA nicking by a trinuclear chromium complex. Inorganica Chimica Acta, 1998, 268, 211-219.	1.2	19
101	Overexpression, Purification, and Characterization of the Cloned Metallo-Î²-Lactamase L1 from <i>Stenotrophomonas maltophilia</i>. Antimicrobial Agents and Chemotherapy, 1998, 42, 921-926.	1.4	181
102	Glyoxalase II from A. thaliana requires Zn(II) for catalytic activity. FEBS Letters, 1997, 418, 351-354.	1.3	57
103	Spectroscopic Studies on the Designed Metal-Binding Sites of the 43C9 Single Chain Antibody. Journal of the American Chemical Society, 1995, 117, 5627-5634.	6.6	31
104	Purple acid phosphatase catalyzes the direct transfer of a phospho group from substrate to water.. Journal of Inorganic Biochemistry, 1993, 51, 106.	1.5	1
105	Purple acid phosphatase: a diiron enzyme that catalyzes a direct phospho group transfer to water. Journal of the American Chemical Society, 1993, 115, 2974-2975.	6.6	103
106	Hydrolysis of phosphate monoesters: a biological problem with multiple chemical solutions. Trends in Biochemical Sciences, 1992, 17, 105-110.	3.7	310