Joan B Broderick

List of Publications by Year
in descending order

105 papers	6,794 citations	53794 45 h-index	62596 80 g-index
188 all docs	188 docs citations	188 times ranked	4117 citing authors

#	Article	IF	Citations
1	The B12-independent glycerol dehydratase activating enzyme from Clostridium butyricum cleaves SAM to produce 5â€²-deoxyadenosine and not 5â€²-deoxy-5â€²-(methylthio)adenosine. Journal of Inorganic Biochemistry, 2022, 227, 111662.	3.5	10
2	Mechanism of Radical <i>S</i>-Adenosyl-<scp>l</scp>-methionine Adenosylation: Radical Intermediates and the Catalytic Competence of the 5â€²-Deoxyadenosyl Radical. Journal of the American Chemical Society, 2022, 144, 5087-5098.	13.7	18
3	[FeFe]â€Hydrogenase: Defined Lysateâ€Free Maturation Reveals a Key Role for Lipoylâ€Hâ€Protein in DTMA Ligand Biosynthesis. Angewandte Chemie - International Edition, 2022, 61, .	13.8	13
4	[FeFe]â€Hydrogenase: Defined Lysateâ€Free Maturation Reveals a Key Role for Lipoylâ€Hâ€Protein in DTMA Ligand Biosynthesis. Angewandte Chemie, 2022, 134, .	2.0	5
5	Titelbild: [FeFe]â€Hydrogenase: Defined Lysateâ€Free Maturation Reveals a Key Role for Lipoylâ€Hâ€Protein in DTMA Ligand Biosynthesis (Angew. Chem. 22/2022). Angewandte Chemie, 2022, 134, .	2.0	0
6	<i>S</i>â€Adenosylâ€‹<scp>l</scp>â€ethionine is a Catalytically Competent Analog of <i>S</i>â€Adenosylâ€‹<scp>l</scp>â€methionine (SAM) in the Radical SAM Enzyme HydG. Angewandte Chemie - International Edition, 2021, 60, 4666-4672.	13.8	19
7	<i>S</i>â€Adenosylâ€‹<scp>l</scp>â€ethionine is a Catalytically Competent Analog of <i>S</i>â€Adenosylâ€‹<scp>l</scp>â€methionine (SAM) in the Radical SAM Enzyme HydG. Angewandte Chemie, 2021, 133, 4716-4722.	2.0	3
8	HydG, the â€œdanglerâ€• iron, and catalytic production of free CO and CN^{âˆ’}: implications for [FeFe]-hydrogenase maturation. Dalton Transactions, 2021, 50, 10405-10422.	3.3	11
9	Radical S-Adenosyl-l-Methionine Enzymes. , 2021, , 124-133.		0
10	Examining Pathways of Iron and Sulfur Acquisition, Trafficking, Deployment, and Storage in Mineral-Grown Methanogen Cells. Journal of Bacteriology, 2021, 203, e0014621.	2.2	13
11	Active-Site Controlled, Jahnâ€“Teller Enabled Regioselectivity in Reductive Sâ€“C Bond Cleavage of <i>S</i>-Adenosylmethionine in Radical SAM Enzymes. Journal of the American Chemical Society, 2021, 143, 335-348.	13.7	15
12	[FeFe]-hydrogenase maturation: H-cluster assembly intermediates tracked by electron paramagnetic resonance, infrared, and X-ray absorption spectroscopy. Journal of Biological Inorganic Chemistry, 2020, 25, 777-788.	2.6	10
13	Radical SAM Enzyme Spore Photoproduct Lyase: Properties of the Î© Organometallic Intermediate and Identification of Stable Protein Radicals Formed during Substrate-Free Turnover. Journal of the American Chemical Society, 2020, 142, 18652-18660.	13.7	10
14	The Elusive 5â€²-Deoxyadenosyl Radical: Captured and Characterized by Electron Paramagnetic Resonance and Electron Nuclear Double Resonance Spectroscopies. Journal of the American Chemical Society, 2019, 141, 12139-12146.	13.7	68
15	Radical SAM enzymes: surprises along the path to understanding mechanism. Journal of Biological Inorganic Chemistry, 2019, 24, 769-776.	2.6	35
16	Radical S-adenosylmethionine maquette chemistry: Cx3Cx2C peptide coordinated redox active [4Feâ€“4S] clusters. Journal of Biological Inorganic Chemistry, 2019, 24, 793-807.	2.6	11
17	H-cluster assembly intermediates built on HydF by the radical SAM enzymes HydE and HydG. Journal of Biological Inorganic Chemistry, 2019, 24, 783-792.	2.6	15
18	Photoinduced Electron Transfer in a Radical SAM Enzyme Generates an <i>S</i>-Adenosylmethionine Derived Methyl Radical. Journal of the American Chemical Society, 2019, 141, 16117-16124.	13.7	31

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19	Characterization of the Preprocessed Copper Site Equilibrium in Amine Oxidase and Assignment of the Reactive Copper Site in Topaquinone Biogenesis. Journal of the American Chemical Society, 2019, 141, 8877-8890.	13.7	8
20	Secondary structure analysis of peptides with relevance to ironâ€“sulfur cluster nesting. Journal of Computational Chemistry, 2019, 40, 515-526.	3.3	8
21	Mechanism of Radical Initiation in the Radical <i>S</i>-Adenosyl-<scp>l</scp>-methionine Superfamily. Accounts of Chemical Research, 2018, 51, 2611-2619.	15.6	78
22	Compositional and structural insights into the nature of the H-cluster precursor on HydF. Dalton Transactions, 2018, 47, 9521-9535.	3.3	16
23	Paradigm Shift for Radical <i>S</i>-Adenosyl-<scp>l</scp>-methionine Reactions: The Organometallic Intermediate Î© Is Central to Catalysis. Journal of the American Chemical Society, 2018, 140, 8634-8638.	13.7	76
24	Mechanistic Studies of Radical SAM Enzymes: Pyruvate Formate-Lyase Activating Enzyme and Lysine 2,3-Aminomutase Case Studies. Methods in Enzymology, 2018, 606, 269-318.	1.0	17
25	Electron Spin Relaxation and Biochemical Characterization of the Hydrogenase Maturase HydF: Insights into [2Fe-2S] and [4Fe-4S] Cluster Communication and Hydrogenase Activation. Biochemistry, 2017, 56, 3234-3247.	2.5	12
26	Ironâ€“Sulfur Cluster States of the Hydrogenase Maturase HydF. Biochemistry, 2017, 56, 4733-4734.	2.5	5
27	Monovalent Cation Activation of the Radical SAM Enzyme Pyruvate Formate-Lyase Activating Enzyme. Journal of the American Chemical Society, 2017, 139, 11803-11813.	13.7	28
28	17 Origin and evolution of Fe-S proteins and enzymes. , 2017, , 445-462.		2
29	A Redox Active [2Fe-2S] Cluster on the Hydrogenase Maturase HydF. Biochemistry, 2016, 55, 3514-3527.	2.5	18
30	Radical SAM catalysis via an organometallic intermediate with an Feâ€“[5â€²-C]-deoxyadenosyl bond. Science, 2016, 352, 822-825.	12.6	113
31	Cutting Choline with Radical Scissors. Cell Chemical Biology, 2016, 23, 1173-1174.	5.2	2
32	Radical S-Adenosyl-l-methionine Chemistry in the Synthesis of Hydrogenase and Nitrogenase Metal Cofactors. Journal of Biological Chemistry, 2015, 290, 3987-3994.	3.4	22
33	[FeFe]-Hydrogenase Oxygen Inactivation Is Initiated at the H Cluster 2Fe Subcluster. Journal of the American Chemical Society, 2015, 137, 1809-1816.	13.7	119
34	Special issue on ironâ€“sulfur proteins: Structure, function, biogenesis and diseases. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1251-1252.	4.1	20
35	Why Nature Uses Radical SAM Enzymes so Widely: Electron Nuclear Double Resonance Studies of Lysine 2,3-Aminomutase Show the 5â€²-dAdoâ€¢ â€œFree Radicalâ€• Is Never Free. Journal of the American Chemical Society, 2015, 137, 7111-7121.	13.7	59
36	[FeFe]-Hydrogenase Maturation: Insights into the Role HydE Plays in Dithiomethylamine Biosynthesis. Biochemistry, 2015, 54, 1807-1818.	2.5	57

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37	[FeFe]- and [NiFe]-hydrogenase diversity, mechanism, and maturation. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1350-1369.	4.1	400
38	Spectroscopic Investigation of Pyruvate Formate Lyase-activating Enzyme: A Look into EPR, ENDOR and Mossabuer Spectroscopy. Research Journal of Applied Sciences, Engineering and Technology, 2014, 8, 1075-1097.	0.1	0
39	Glycyl radical activating enzymes: Structure, mechanism, and substrate interactions. Archives of Biochemistry and Biophysics, 2014, 546, 64-71.	3.0	88
40	Combined MÃ¶ssbauer spectroscopic, multi-edge X-ray absorption spectroscopic, and density functional theoretical study of the radical SAM enzyme spore photoproduct lyase. Journal of Biological Inorganic Chemistry, 2014, 19, 465-483.	2.6	9
41	Pyruvate Formate-lyase and Its Activation by Pyruvate Formate-lyase Activating Enzyme. Journal of Biological Chemistry, 2014, 289, 5723-5729.	3.4	50
42	Reversible H Atom Abstraction Catalyzed by the Radical <i>S</i>-Adenosylmethionine Enzyme HydG. Journal of the American Chemical Society, 2014, 136, 13086-13089.	13.7	38
43	[FeFe]-Hydrogenase Maturation. Biochemistry, 2014, 53, 4090-4104.	2.5	93
44	Solution phase dynamics of the DNA repair enzyme spore photoproduct lyase as probed by H/D exchange. FEBS Letters, 2014, 588, 3023-3029.	2.8	3
45	H-Cluster assembly during maturation of the [FeFe]-hydrogenase. Journal of Biological Inorganic Chemistry, 2014, 19, 747-757.	2.6	36
46	Radical <i>S</i>-Adenosylmethionine Enzymes. Chemical Reviews, 2014, 114, 4229-4317.	47.7	651
47	23. Origin and evolution of Fe-S proteins and enzymes. , 2014, , 619-636.		3
48	Flavodoxin cofactor binding induces structural changes that are required for proteinâ€“protein interactions with NADP+ oxidoreductase and pyruvate formate-lyase activating enzyme. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2013, 1834, 2512-2519.	2.3	16
49	Biochemical and Kinetic Characterization of Radical <i>S</i>-Adenosyl-<scp>l</scp>-methionine Enzyme HydG. Biochemistry, 2013, 52, 8696-8707.	2.5	50
50	EPR and FTIR Analysis of the Mechanism of H₂ Activation by [FeFe]-Hydrogenase HydA1 from Chlamydomonas reinhardtii. Journal of the American Chemical Society, 2013, 135, 6921-6929.	13.7	82
51	Biogenesis of the Hâ€cluster of the [FeFe]â€hydrogenase. FASEB Journal, 2013, 27, 98.2.	0.5	0
52	Viperin: a radical response to viral infection. Biomolecular Concepts, 2012, 3, 255-266.	2.2	43
53	Ironâ€“sulfur cluster coordination in the [FeFe]â€hydrogenase H cluster biosynthetic factor HydF. FEBS Letters, 2012, 586, 3939-3943.	2.8	16
54	Genome sequence of Desulfitobacterium hafniense DCB-2, a Gram-positive anaerobe capable of dehalogenation and metal reduction. BMC Microbiology, 2012, 12, 21.	3.3	84

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55	Radical AdoMet enzymes in complex metal cluster biosynthesis. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2012, 1824, 1254-1263.	2.3	25
56	Emerging themes in radical SAM chemistry. Current Opinion in Structural Biology, 2012, 22, 701-710.	5.7	42
57	Radical SAM enzymes in methylation and methylthiolation. Metallomics, 2012, 4, 1149.	2.4	19
58	Emerging Paradigms for Complex Iron-Sulfur Cofactor Assembly and Insertion. Annual Review of Biochemistry, 2012, 81, 429-450.	11.1	90
59	S K-edge XAS and DFT Calculations on SAM Dependent Pyruvate Formate-Lyase Activating Enzyme: Nature of Interaction between the Fe₄S₄ Cluster and SAM and its Role in Reactivity. Journal of the American Chemical Society, 2011, 133, 18656-18662.	13.7	45
60	Insights into [FeFe]-Hydrogenase Structure, Mechanism, and Maturation. Structure, 2011, 19, 1038-1052.	3.3	220
61	Cyanide and Carbon Monoxide Ligand Formation in Hydrogenase Biosynthesis. European Journal of Inorganic Chemistry, 2011, 2011, 935-947.	2.0	19
62	Cyanide and Carbon Monoxide Ligand Formation in Hydrogenase Biosynthesis. European Journal of Inorganic Chemistry, 2011, 2011, .	2.0	0
63	Biosynthesis of complex ironâ€“sulfur enzymes. Current Opinion in Chemical Biology, 2011, 15, 319-327.	6.1	65
64	S-Adenosylmethionine and Ironâ€“Sulfur Clusters in Biological Radical Reactions: The Radical SAM Superfamily. , 2010, , 625-661.		7
65	Complete stereospecific repair of a synthetic dinucleotide spore photoproduct by spore photoproduct lyase. Journal of Biological Inorganic Chemistry, 2010, 15, 943-955.	2.6	28
66	The antiviral protein viperin is a radical SAM enzyme. FEBS Letters, 2010, 584, 1263-1267.	2.8	103
67	[FeFe]â€Hydrogenase Cyanide Ligands Derived From <i>S</i>â€Adenosylmethionineâ€Dependent Cleavage of Tyrosine. Angewandte Chemie - International Edition, 2010, 49, 1687-1690.	13.8	144
68	Stepwise [FeFe]-hydrogenase H-cluster assembly revealed in the structure of HydAÎ”EFG. Nature, 2010, 465, 248-251.	27.8	295
69	A radically different enzyme. Nature, 2010, 465, 877-878.	27.8	20
70	Identification and Characterization of a Novel Member of the Radical AdoMet Enzyme Superfamily and Implications for the Biosynthesis of the Hmd Hydrogenase Active Site Cofactor. Journal of Bacteriology, 2010, 192, 595-598.	2.2	45
71	Pyruvate Formate-lyase, Evidence for an Open Conformation Favored in the Presence of Its Activating Enzyme. Journal of Biological Chemistry, 2010, 285, 27224-27231.	3.4	38
72	Synthesis of the 2Fe subcluster of the [FeFe]-hydrogenase H cluster on the HydF scaffold. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 10448-10453.	7.1	129

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73	[FeFe]-Hydrogenase Maturation: HydG-Catalyzed Synthesis of Carbon Monoxide. Journal of the American Chemical Society, 2010, 132, 9247-9249.	13.7	149
74	An Efficient Deprotection of <i>N</i>-Trimethylsilylethoxymethyl (SEM) Groups From Dinucleosides and Dinucleotides. Nucleosides, Nucleotides and Nucleic Acids, 2010, 29, 132-143.	1.1	7
75	Control of radical chemistry in the AdoMet radical enzymes. Current Opinion in Chemical Biology, 2009, 13, 74-83.	6.1	62
76	Frontiers in enzymatic Câ€“H-bond activation. Current Opinion in Chemical Biology, 2009, 13, 51-57.	6.1	27
77	Activation of HydA^{Î”EFG} Requires a Preformed [4Fe-4S] Cluster. Biochemistry, 2009, 48, 6240-6248.	2.5	119
78	The Ironâˆ’Sulfur Cluster of Pyruvate Formate-Lyase Activating Enzyme in Whole Cells: Cluster Interconversion and a Valence-Localized [4Fe-4S]²⁺ State. Biochemistry, 2009, 48, 9234-9241.	2.5	47
79	Spore Photoproduct Lyase Catalyzes Specific Repair of the 5<i>R</i> but Not the 5<i>S</i> Spore Photoproduct. Journal of the American Chemical Society, 2009, 131, 2420-2421.	13.7	55
80	Chemoselective Deprotection of Triethylsilyl Ethers. Nucleosides, Nucleotides and Nucleic Acids, 2009, 28, 1016-1029.	1.1	9
81	Hydrogenase cluster biosynthesis: organometallic chemistry nature's way. Dalton Transactions, 2009, , 4274.	3.3	66
82	HydF as a scaffold protein in [FeFe] hydrogenase Hâ€cluster biosynthesis. FEBS Letters, 2008, 582, 2183-2187.	2.8	122
83	Structural basis for glycyl radical formation by pyruvate formate-lyase activating enzyme. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 16137-16141.	7.1	170
84	Inactivation of E. coli pyruvate formate-lyase: Role of AdhE and small molecules. Archives of Biochemistry and Biophysics, 2007, 459, 1-9.	3.0	39
85	Assembling iron-sulfur clusters in the cytosol. Nature Chemical Biology, 2007, 3, 243-244.	8.0	6
86	In vitro activation of [FeFe] hydrogenase: new insights into hydrogenase maturation. Journal of Biological Inorganic Chemistry, 2007, 12, 443-447.	2.6	109
87	Characterization of an Active Spore Photoproduct Lyase, a DNA Repair Enzyme in the Radical S-Adenosylmethionine Superfamily. Journal of Biological Chemistry, 2006, 281, 25994-26003.	3.4	64
88	Spectroscopic Approaches to Elucidating Novel Ironâˆ’Sulfur Chemistry in the â€œRadical-SAMâ€•Protein Superfamily. Inorganic Chemistry, 2005, 44, 727-741.	4.0	108
89	Pyruvate formate-lyase activating enzyme: elucidation of a novel mechanism for glycyl radical formation. Archives of Biochemistry and Biophysics, 2005, 433, 288-296.	3.0	44
90	Bioinorganic chemistry. Current Opinion in Chemical Biology, 2003, 7, 157-159.	6.1	1

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91	Structural studies of the interaction of <i>S</i>â€adenosylmethionine with the [4Feâ€4S] clusters in biotin synthase and pyruvate formateâ€lyase activating enzyme. Protein Science, 2003, 12, 1573-1577.	7.6	28
92	Paramagnetic Resonance in Mechanistic Studies of Fe-S/Radical Enzymes. ACS Symposium Series, 2003, , 113-127.	0.5	0
93	Coordination of Adenosylmethionine to a Unique Iron Site of the [4Fe-4S] of Pyruvate Formate-Lyase Activating Enzyme:â€‰ A MÃ¶ssbauer Spectroscopic Study. Journal of the American Chemical Society, 2002, 124, 912-913.	13.7	139
94	Direct H Atom Abstraction from Spore Photoproduct C-6 Initiates DNA Repair in the Reaction Catalyzed by Spore Photoproduct Lyase:Â Evidence for a Reversibly Generated Adenosyl Radical Intermediate. Journal of the American Chemical Society, 2002, 124, 2860-2861.	13.7	121
95	An Anchoring Role for FeS Clusters:â€‰ Chelation of the Amino Acid Moiety of S-Adenosylmethionine to the Unique Iron Site of the [4Feâ˜'4S] Cluster of Pyruvate Formate-Lyase Activating Enzyme. Journal of the American Chemical Society, 2002, 124, 11270-11271.	13.7	185
96	Electron-Nuclear Double Resonance Spectroscopic Evidence ThatS-Adenosylmethionine Binds in Contact with the Catalytically Active [4Feâ˜'4S]+Cluster of Pyruvate Formate-Lyase Activating Enzyme. Journal of the American Chemical Society, 2002, 124, 3143-3151.	13.7	186
97	Adenosylmethionine-dependent iron-sulfur enzymes: versatile clusters in a radical new role. Journal of Biological Inorganic Chemistry, 2001, 6, 209-226.	2.6	146
98	Pyruvate Formate-Lyase-Activating Enzyme: Strictly Anaerobic Isolation Yields Active Enzyme Containing a [3Feâ€"4S]+ Cluster. Biochemical and Biophysical Research Communications, 2000, 269, 451-456.	2.1	96
99	Conversion of 3Fe-4S to 4Fe-4S Clusters in Native Pyruvate Formate-Lyase Activating Enzyme:Â MÃ¶ssbauer Characterization and Implications for Mechanism. Journal of the American Chemical Society, 2000, 122, 12497-12506.	13.7	86
100	Escherichia coli LipA Is a Lipoyl Synthase:â€‰ In Vitro Biosynthesis of Lipoylated Pyruvate Dehydrogenase Complex from Octanoyl-Acyl Carrier Protein. Biochemistry, 2000, 39, 15166-15178.	2.5	199
101	The [4Fe-4S]1+Cluster of Pyruvate Formate-Lyase Activating Enzyme Generates the Glycyl Radical on Pyruvate Formate-Lyase:Â EPR-Detected Single Turnover. Journal of the American Chemical Society, 2000, 122, 8331-8332.	13.7	106
102	Catechol dioxygenases. Essays in Biochemistry, 1999, 34, 173-189.	4.7	85
103	Pyruvate Formate-Lyase Activating Enzyme Is an Ironâ˜'Sulfur Protein. Journal of the American Chemical Society, 1997, 119, 7396-7397.	13.7	118
104	Evidence for retention of biological activity of a non-heme iron enzyme adsorbed on a silver colloid: A surface-enhanced resonance Raman scattering study. Biochemistry, 1993, 32, 13771-13776.	2.5	39
105	Overproduction, purification, and characterization of chlorocatechol dioxygenase, a non-heme iron dioxygenase with broad substrate tolerance. Biochemistry, 1991, 30, 7349-7358.	2.5	90