

Donald F Becker

List of Publications by Year in descending order

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87
papers

4,129
citations

94269

37
h-index

123241

61
g-index

90
all docs

90
docs citations

90
times ranked

4365
citing authors

#	ARTICLE	IF	CITATIONS
1	Structural analysis of prolines and hydroxyprolines binding to the l-glutamate- $\hat{1}^3$ -semialdehyde dehydrogenase active site of bifunctional proline utilization A. Archives of Biochemistry and Biophysics, 2021, 698, 108727.	1.4	6
2	Disease variants of human $\hat{1}^1$ -pyrroline-5-carboxylate reductase 2 (PYCR2). Archives of Biochemistry and Biophysics, 2021, 703, 108852.	1.4	9
3	Structural basis for the stereospecific inhibition of the dual proline/hydroxyproline catabolic enzyme ALDH4A1 by trans-4-hydroxy-L-proline. Protein Science, 2021, 30, 1714-1722.	3.1	4
4	Photoinduced Covalent Irreversible Inactivation of Proline Dehydrogenase by S-Heterocycles. ACS Chemical Biology, 2021, 16, 2268-2279.	1.6	2
5	Probing the function of a ligand-modulated dynamic tunnel in bifunctional proline utilization A (PutA). Archives of Biochemistry and Biophysics, 2021, 712, 109025.	1.4	3
6	Evidence for Proline Catabolic Enzymes in the Metabolism of Thiazolidine Carboxylates. Biochemistry, 2021, 60, 3610-3620.	1.2	0
7	Kinetics of human pyrroline-5-carboxylate reductase in l-thioprolin metabolism. Amino Acids, 2021, 53, 1863-1874.	1.2	0
8	An Evolutionary Strategy for Identification of Higher Order, Green Fluorescent Host-Guest Pairs Compatible with Living Systems. Chemistry - A European Journal, 2020, 26, 16721-16726.	1.7	0
9	In crystallo screening for proline analog inhibitors of the proline cycle enzyme PYCR1. Journal of Biological Chemistry, 2020, 295, 18316-18327.	1.6	22
10	Cautionary Tale of Using Tris(alkyl)phosphine Reducing Agents with NAD ⁺ -Dependent Enzymes. Biochemistry, 2020, 59, 3285-3289.	1.2	7
11	Covalent Modification of the Flavin in Proline Dehydrogenase by Thiazolidine-2-Carboxylate. ACS Chemical Biology, 2020, 15, 936-944.	1.6	10
12	Proline metabolic dynamics and implications in drought tolerance of peanut plants. Plant Physiology and Biochemistry, 2020, 151, 566-578.	2.8	110
13	Methods for determining the reduction potentials of flavin enzymes. Methods in Enzymology, 2019, 620, 1-25.	0.4	14
14	Dynamic and structural differences between heme oxygenase-1 and -2 are due to differences in their C-terminal regions. Journal of Biological Chemistry, 2019, 294, 8259-8272.	1.6	17
15	Structural and Biochemical Characterization of Aldehyde Dehydrogenase 12, the Last Enzyme of Proline Catabolism in Plants. Journal of Molecular Biology, 2019, 431, 576-592.	2.0	20
16	Role of Proline in Pathogen and Host Interactions. Antioxidants and Redox Signaling, 2019, 30, 683-709.	2.5	83
17	The Proline Cycle As a Potential Cancer Therapy Target. Biochemistry, 2018, 57, 3433-3444.	1.2	107
18	Structural Basis for the Substrate Inhibition of Proline Utilization A by Proline. Molecules, 2018, 23, 32.	1.7	9

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19	Redox Modulation of Oligomeric State in Proline Utilization A. <i>Biophysical Journal</i> , 2018, 114, 2833-2843.	0.2	2
20	Structure and characterization of a class 3B proline utilization A: Ligand-induced dimerization and importance of the C-terminal domain for catalysis. <i>Journal of Biological Chemistry</i> , 2017, 292, 9652-9665.	1.6	21
21	Identification of a Conserved Histidine As Being Critical for the Catalytic Mechanism and Functional Switching of the Multifunctional Proline Utilization A Protein. <i>Biochemistry</i> , 2017, 56, 3078-3088.	1.2	5
22	Resolving the cofactor-binding site in the proline biosynthetic enzyme human pyrroline-5-carboxylate reductase 1. <i>Journal of Biological Chemistry</i> , 2017, 292, 7233-7243.	1.6	42
23	Evidence for Pipecolate Oxidase in Mediating Protection Against Hydrogen Peroxide Stress. <i>Journal of Cellular Biochemistry</i> , 2017, 118, 1678-1688.	1.2	28
24	Structure, function, and mechanism of proline utilization A (PutA). <i>Archives of Biochemistry and Biophysics</i> , 2017, 632, 142-157.	1.4	56
25	Discovery of the Membrane Binding Domain in Trifunctional Proline Utilization A. <i>Biochemistry</i> , 2017, 56, 6292-6303.	1.2	7
26	Structures of Proline Utilization A (PutA) Reveal the Fold and Functions of the Aldehyde Dehydrogenase Superfamily Domain of Unknown Function. <i>Journal of Biological Chemistry</i> , 2016, 291, 24065-24075.	1.6	27
27	Engineering a trifunctional proline utilization A chimaera by fusing a DNA-binding domain to a bifunctional PutA. <i>Bioscience Reports</i> , 2016, 36, .	1.1	6
28	Structural insights into the mechanism defining substrate affinity in <i>Arabidopsis thaliana</i> dUTPase: the role of tryptophan 93 in ligand orientation. <i>BMC Research Notes</i> , 2015, 8, 784.	0.6	7
29	Connecting proline metabolism and signaling pathways in plant senescence. <i>Frontiers in Plant Science</i> , 2015, 6, 552.	1.7	136
30	Proline Metabolism Increases <i>katG</i> Expression and Oxidative Stress Resistance in <i>Escherichia coli</i> . <i>Journal of Bacteriology</i> , 2015, 197, 431-440.	1.0	80
31	First Evidence for Substrate Channeling between Proline Catabolic Enzymes. <i>Journal of Biological Chemistry</i> , 2015, 290, 2225-2234.	1.6	37
32	A Multilaboratory Comparison of Calibration Accuracy and the Performance of External References in Analytical Ultracentrifugation. <i>PLoS ONE</i> , 2015, 10, e0126420.	1.1	71
33	Evidence for Hysteretic Substrate Channeling in the Proline Dehydrogenase and ¹⁵ N-1-Pyrroline-5-carboxylate Dehydrogenase Coupled Reaction of Proline Utilization A (PutA). <i>Journal of Biological Chemistry</i> , 2014, 289, 3639-3651.	1.6	28
34	Structures of the PutA peripheral membrane flavoenzyme reveal a dynamic substrate-channeling tunnel and the quinone-binding site. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 3389-3394.	3.3	63
35	Proline Biosynthesis Is Required for Endoplasmic Reticulum Stress Tolerance in <i>Saccharomyces cerevisiae</i> . <i>Journal of Biological Chemistry</i> , 2014, 289, 27794-27806.	1.6	37
36	Protein/Protein Interactions in the Mammalian Heme Degradation Pathway. <i>Journal of Biological Chemistry</i> , 2014, 289, 29836-29858.	1.6	29

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37	Chlorovirus PBCV-1 Encodes an Active Copper-Zinc Superoxide Dismutase. <i>Journal of Virology</i> , 2014, 88, 12541-12550.	1.5	22
38	Kinetic and Structural Characterization of Tunnel-Perturbing Mutants in <i>Bradyrhizobium japonicum</i> Proline Utilization A. <i>Biochemistry</i> , 2014, 53, 5150-5161.	1.2	19
39	Evidence That the C-Terminal Domain of a Type B PutA Protein Contributes to Aldehyde Dehydrogenase Activity and Substrate Channeling. <i>Biochemistry</i> , 2014, 53, 5661-5673.	1.2	18
40	Structural Studies of Yeast β -Pyrroline-5-carboxylate Dehydrogenase (ALDH4A1): Active Site Flexibility and Oligomeric State. <i>Biochemistry</i> , 2014, 53, 1350-1359.	1.2	30
41	Proline Mechanisms of Stress Survival. <i>Antioxidants and Redox Signaling</i> , 2013, 19, 998-1011.	2.5	828
42	Involvement of the β 3- β 3 Loop of the Proline Dehydrogenase Domain in Allosteric Regulation of Membrane Association of Proline Utilization A. <i>Biochemistry</i> , 2013, 52, 4482-4491.	1.2	17
43	2 PutA and proline metabolism. , 2012, , 31-56.		1
44	Proline dehydrogenase is essential for proline protection against hydrogen peroxide-induced cell death. <i>Free Radical Biology and Medicine</i> , 2012, 53, 1181-1191.	1.3	131
45	Crystal Structures and Kinetics of Monofunctional Proline Dehydrogenase Provide Insight into Substrate Recognition and Conformational Changes Associated with Flavin Reduction and Product Release. <i>Biochemistry</i> , 2012, 51, 10099-10108.	1.2	31
46	Rapid Reaction Kinetics of Proline Dehydrogenase in the Multifunctional Proline Utilization A Protein. <i>Biochemistry</i> , 2012, 51, 511-520.	1.2	33
47	The Three-Dimensional Structural Basis of Type II Hyperprolinemia. <i>Journal of Molecular Biology</i> , 2012, 420, 176-189.	2.0	57
48	Role of apoptosis-inducing factor, proline dehydrogenase, and NADPH oxidase in apoptosis and oxidative stress. <i>Cell Health and Cytoskeleton</i> , 2012, 2012, 11.	0.7	39
49	Substrate channeling in proline metabolism. <i>Frontiers in Bioscience - Landmark</i> , 2012, 17, 375.	3.0	49
50	Flavin Redox Switching of Protein Functions. <i>Antioxidants and Redox Signaling</i> , 2011, 14, 1079-1091.	2.5	41
51	Steady-state kinetic mechanism of the proline:ubiquinone oxidoreductase activity of proline utilization A (PutA) from <i>Escherichia coli</i> . <i>Archives of Biochemistry and Biophysics</i> , 2011, 516, 113-120.	1.4	43
52	Small-angle X-ray Scattering Studies of the Oligomeric State and Quaternary Structure of the Trifunctional Proline Utilization A (PutA) Flavoprotein from <i>Escherichia coli</i> . <i>Journal of Biological Chemistry</i> , 2011, 286, 43144-43153.	1.6	17
53	Crystal structure of the bifunctional proline utilization A flavoenzyme from <i>Bradyrhizobium japonicum</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 2878-2883.	3.3	59
54	The Structure of the Proline Utilization A Proline Dehydrogenase Domain Inactivated by N-Propargylglycine Provides Insight into Conformational Changes Induced by Substrate Binding and Flavin Reduction,. <i>Biochemistry</i> , 2010, 49, 560-569.	1.2	36

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55	Purification and characterization of Put1p from <i>Saccharomyces cerevisiae</i> . <i>Archives of Biochemistry and Biophysics</i> , 2010, 498, 136-142.	1.4	38
56	Solution structure of the <i>Pseudomonas putida</i> protein PpPutA45 and its DNA complex. <i>Proteins: Structure, Function and Bioinformatics</i> , 2009, 75, 12-27.	1.5	12
57	Direct linking of metabolism and gene expression in the proline utilization A protein from <i>Escherichia coli</i> . <i>Amino Acids</i> , 2008, 35, 711-718.	1.2	42
58	Proline modulates the intracellular redox environment and protects mammalian cells against oxidative stress. <i>Free Radical Biology and Medicine</i> , 2008, 44, 671-681.	1.3	291
59	Structural Basis of the Transcriptional Regulation of the Proline Utilization Regulon by Multifunctional PutA. <i>Journal of Molecular Biology</i> , 2008, 381, 174-188.	2.0	62
60	Characterization of a <i>Helicobacter hepaticus</i> putA Mutant Strain in Host Colonization and Oxidative Stress. <i>Infection and Immunity</i> , 2008, 76, 3037-3044.	1.0	47
61	Structure and Kinetics of Monofunctional Proline Dehydrogenase from <i>Thermus thermophilus</i> . <i>Journal of Biological Chemistry</i> , 2007, 282, 14316-14327.	1.6	88
62	Redox-Induced Changes in Flavin Structure and Roles of Flavin N(5) and the Ribityl -OH Group in Regulating PutA Membrane Binding. <i>Biochemistry</i> , 2007, 46, 483-491.	1.2	51
63	Kinetic and thermodynamic analysis of <i>Bradyrhizobium japonicum</i> PutA membrane associations. <i>Archives of Biochemistry and Biophysics</i> , 2006, 445, 174-183.	1.4	14
64	Crystal structures of the DNA-binding domain of <i>Escherichia coli</i> proline utilization A flavoprotein and analysis of the role of Lys9 in DNA recognition. <i>Protein Science</i> , 2006, 15, 2630-2641.	3.1	38
65	Tomato QM-Like Protein Protects <i>Saccharomyces cerevisiae</i> Cells against Oxidative Stress by Regulating Intracellular Proline Levels. <i>Applied and Environmental Microbiology</i> , 2006, 72, 4001-4006.	1.4	79
66	Oxygen Reactivity of PutA from <i>Helicobacter</i> Species and Proline-Linked Oxidative Stress. <i>Journal of Bacteriology</i> , 2006, 188, 1227-1235.	1.0	39
67	Characterization of a Bifunctional PutA Homologue from <i>Bradyrhizobium japonicum</i> and Identification of an Active Site Residue that Modulates Proline Reduction of the Flavin Adenine Dinucleotide Cofactor. <i>Biochemistry</i> , 2005, 44, 9130-9139.	1.2	40
68	Exploring the Proline-Dependent Conformational Change in the Multifunctional PutA Flavoprotein by Tryptophan Fluorescence Spectroscopy. <i>Biochemistry</i> , 2005, 44, 12297-12306.	1.2	21
69	Identification and Characterization of the DNA-binding Domain of the Multifunctional PutA Flavoenzyme. <i>Journal of Biological Chemistry</i> , 2004, 279, 31171-31176.	1.6	46
70	Probing a hydrogen bond pair and the FAD redox properties in the proline dehydrogenase domain of <i>Escherichia coli</i> PutA. <i>Biochimica Et Biophysica Acta - Proteins and Proteomics</i> , 2004, 1701, 49-59.	1.1	14
71	Structures of the <i>Escherichia coli</i> PutA Proline Dehydrogenase Domain in Complex with Competitive Inhibitors. <i>Biochemistry</i> , 2004, 43, 12539-12548.	1.2	74
72	Regulation of PutA Membrane Associations by Flavin Adenine Dinucleotide Reduction. <i>Biochemistry</i> , 2004, 43, 13165-13174.	1.2	49

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73	Structure of the proline dehydrogenase domain of the multifunctional PutA flavoprotein. <i>Nature Structural Biology</i> , 2003, 10, 109-114.	9.7	96
74	Flavin Redox State Triggers Conformational Changes in the PutA Protein from <i>Escherichia coli</i> . <i>Biochemistry</i> , 2003, 42, 5469-5477.	1.2	45
75	Electrochemical and Functional Characterization of the Proline Dehydrogenase Domain of the PutA Flavoprotein from <i>Escherichia coli</i> . <i>Biochemistry</i> , 2002, 41, 6525-6532.	1.2	33
76	Effects of proline analog binding on the spectroscopic and redox properties of PutA. <i>Archives of Biochemistry and Biophysics</i> , 2002, 408, 131-136.	1.4	39
77	Redox Properties of the PutA Protein from <i>Escherichia coli</i> and the Influence of the Flavin Redox State on PutA-DNA Interactions. <i>Biochemistry</i> , 2001, 40, 4714-4721.	1.2	70
78	Role of Aromatic Stacking Interactions in the Modulation of the Two-Electron Reduction Potentials of Flavin and Substrate/Product in <i>Megasphaera elsdenii</i> Short-Chain Acyl-Coenzyme A Dehydrogenase. <i>Biochemistry</i> , 2001, 40, 7720-7728.	1.2	32
79	Mechanistic Studies of Methane Biogenesis by Methyl-Coenzyme M Reductase: Evidence that Coenzyme B Participates in Cleaving the C-S Bond of Methyl-Coenzyme M. <i>Biochemistry</i> , 2001, 40, 12875-12885.	1.2	64
80	Activation of Methyl-SCoM Reductase to High Specific Activity after Treatment of Whole Cells with Sodium Sulfide. <i>Biochemistry</i> , 1998, 37, 2639-2647.	1.2	63
81	Electrochemical and Spectroscopic Properties of the Iron-Sulfur Flavoprotein from <i>Methanosarcina thermophila</i> . <i>Journal of Biological Chemistry</i> , 1998, 273, 26462-26469.	1.6	15
82	Nucleotide Excision Repair in the Third Kingdom. <i>Journal of Bacteriology</i> , 1998, 180, 5796-5798.	1.0	45
83	Antioxidant Molecules and Redox Cofactors. , 0, , 11-47.		5
84	Specialized Methods. , 0, , 227-284.		0
85	Pathological Processes Related to Redox. , 0, , 183-225.		0
86	Redox Metabolism and Life. , 0, , 1-9.		0
87	Redox Regulation of Physiological Processes. , 0, , 135-182.		0