Donald F Becker

List of Publications by Year
in descending order

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	Proline Mechanisms of Stress Survival. Antioxidants and Redox Signaling, 2013, 19, 998-1011.	2.5	828
2	Proline modulates the intracellular redox environment and protects mammalian cells against oxidative stress. Free Radical Biology and Medicine, 2008, 44, 671-681.	1.3	291
3	Connecting proline metabolism and signaling pathways in plant senescence. Frontiers in Plant Science, 2015, 6, 552.	1.7	136
4	Proline dehydrogenase is essential for proline protection against hydrogen peroxide-induced cell death. Free Radical Biology and Medicine, 2012, 53, 1181-1191.	1.3	131
5	Proline metabolic dynamics and implications in drought tolerance of peanut plants. Plant Physiology and Biochemistry, 2020, 151, 566-578.	2.8	110
6	The Proline Cycle As a Potential Cancer Therapy Target. Biochemistry, 2018, 57, 3433-3444.	1.2	107
7	Structure of the proline dehydrogenase domain of the multifunctional PutA flavoprotein. Nature Structural Biology, 2003, 10, 109-114.	9.7	96
8	Structure and Kinetics of Monofunctional Proline Dehydrogenase from Thermus thermophilus. Journal of Biological Chemistry, 2007, 282, 14316-14327.	1.6	88
9	Role of Proline in Pathogen and Host Interactions. Antioxidants and Redox Signaling, 2019, 30, 683-709.	2.5	83
10	Proline Metabolism Increases<i>katG</i>Expression and Oxidative Stress Resistance in Escherichia coli. Journal of Bacteriology, 2015, 197, 431-440.	1.0	80
11	Tomato QM-Like Protein Protects Saccharomyces cerevisiae Cells against Oxidative Stress by Regulating Intracellular Proline Levels. Applied and Environmental Microbiology, 2006, 72, 4001-4006.	1.4	79
12	Structures of theEscherichia coliPutA Proline Dehydrogenase Domain in Complex with Competitive Inhibitorsâ€,â€¡. Biochemistry, 2004, 43, 12539-12548.	1.2	74
13	A Multilaboratory Comparison of Calibration Accuracy and the Performance of External References in Analytical Ultracentrifugation. PLoS ONE, 2015, 10, e0126420.	1.1	71
14	Redox Properties of the PutA Protein fromEscherichia coliand the Influence of the Flavin Redox State on PutAâˆ'DNA Interactionsâ€. Biochemistry, 2001, 40, 4714-4721.	1.2	70
15	Mechanistic Studies of Methane Biogenesis by Methyl-Coenzyme M Reductase:Â Evidence that Coenzyme B Participates in Cleaving the Câˆ'S Bond of Methyl-Coenzyme Mâ€. Biochemistry, 2001, 40, 12875-12885.	1.2	64
16	Activation of Methyl-SCoM Reductase to High Specific Activity after Treatment of Whole Cells with Sodium Sulfideâ€. Biochemistry, 1998, 37, 2639-2647.	1.2	63
17	Structures of the PutA peripheral membrane flavoenzyme reveal a dynamic substrate-channeling tunnel and the quinone-binding site. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 3389-3394.	3.3	63
18	Structural Basis of the Transcriptional Regulation of the Proline Utilization Regulon by Multifunctional PutA. Journal of Molecular Biology, 2008, 381, 174-188.	2.0	62

#	Article	IF	Citations
19	Crystal structure of the bifunctional proline utilization A flavoenzyme from <i>Bradyrhizobium japonicum</i>. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 2878-2883.	3.3	59
20	The Three-Dimensional Structural Basis of Type II Hyperprolinemia. Journal of Molecular Biology, 2012, 420, 176-189.	2.0	57
21	Structure, function, and mechanism of proline utilization A (PutA). Archives of Biochemistry and Biophysics, 2017, 632, 142-157.	1.4	56
22	Redox-Induced Changes in Flavin Structure and Roles of Flavin N(5) and the Ribityl 2â€˜-OH Group in Regulating PutAâˆ'Membrane Bindingâ€,â€¡. Biochemistry, 2007, 46, 483-491.	1.2	51
23	Regulation of PutAâˆ'Membrane Associations by Flavin Adenine Dinucleotide Reductionâ€. Biochemistry, 2004, 43, 13165-13174.	1.2	49
24	Substrate channeling in proline metabolism. Frontiers in Bioscience - Landmark, 2012, 17, 375.	3.0	49
25	Characterization of a <i>Helicobacter hepaticus putA</i> Mutant Strain in Host Colonization and Oxidative Stress. Infection and Immunity, 2008, 76, 3037-3044.	1.0	47
26	Identification and Characterization of the DNA-binding Domain of the Multifunctional PutA Flavoenzyme. Journal of Biological Chemistry, 2004, 279, 31171-31176.	1.6	46
27	Flavin Redox State Triggers Conformational Changes in the PutA Protein fromEscherichia coliâ€. Biochemistry, 2003, 42, 5469-5477.	1.2	45
28	Nucleotide Excision Repair in the Third Kingdom. Journal of Bacteriology, 1998, 180, 5796-5798.	1.0	45
29	Steady-state kinetic mechanism of the proline:ubiquinone oxidoreductase activity of proline utilization A (PutA) from Escherichia coli. Archives of Biochemistry and Biophysics, 2011, 516, 113-120.	1.4	43
30	Direct linking of metabolism and gene expression in the proline utilization A protein from Escherichia coli. Amino Acids, 2008, 35, 711-718.	1.2	42
31	Resolving the cofactor-binding site in the proline biosynthetic enzyme human pyrroline-5-carboxylate reductase 1. Journal of Biological Chemistry, 2017, 292, 7233-7243.	1.6	42
32	Flavin Redox Switching of Protein Functions. Antioxidants and Redox Signaling, 2011, 14, 1079-1091.	2.5	41
33	Characterization of a Bifunctional PutA Homologue from Bradyrhizobium japonicum and Identification of an Active Site Residue that Modulates Proline Reduction of the Flavin Adenine Dinucleotide Cofactor. Biochemistry, 2005, 44, 9130-9139.	1.2	40
34	Effects of proline analog binding on the spectroscopic and redox properties of PutA. Archives of Biochemistry and Biophysics, 2002, 408, 131-136.	1.4	39
35	Oxygen Reactivity of PutA from Helicobacter Species and Proline-Linked Oxidative Stress. Journal of Bacteriology, 2006, 188, 1227-1235.	1.0	39
36	Role of apoptosis-inducing factor, proline dehydrogenase, and NADPH oxidase in apoptosis and oxidative stress. Cell Health and Cytoskeleton, 2012, 2012, 11.	0.7	39

#	Article	IF	Citations
37	Crystal structures of the DNA-binding domain ofEscherichia coliproline utilization A flavoprotein and analysis of the role of Lys9 in DNA recognition. Protein Science, 2006, 15, 2630-2641.	3.1	38
38	Purification and characterization of Put1p from Saccharomyces cerevisiae. Archives of Biochemistry and Biophysics, 2010, 498, 136-142.	1.4	38
39	Proline Biosynthesis Is Required for Endoplasmic Reticulum Stress Tolerance in Saccharomyces cerevisiae. Journal of Biological Chemistry, 2014, 289, 27794-27806.	1.6	37
40	First Evidence for Substrate Channeling between Proline Catabolic Enzymes. Journal of Biological Chemistry, 2015, 290, 2225-2234.	1.6	37
41	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,. Biochemistry, 2010, 49, 560-569.	1.2	36
42	Electrochemical and Functional Characterization of the Proline Dehydrogenase Domain of the PutA Flavoprotein fromEscherichia coliâ€. Biochemistry, 2002, 41, 6525-6532.	1.2	33
43	Rapid Reaction Kinetics of Proline Dehydrogenase in the Multifunctional Proline Utilization A Protein. Biochemistry, 2012, 51, 511-520.	1.2	33
44	Role of Aromatic Stacking Interactions in the Modulation of the Two-Electron Reduction Potentials of Flavin and Substrate/Product inMegasphaera elsdeniiShort-Chain Acyl-Coenzyme A Dehydrogenaseâ€. Biochemistry, 2001, 40, 7720-7728.	1.2	32
45	Crystal Structures and Kinetics of Monofunctional Proline Dehydrogenase Provide Insight into Substrate Recognition and Conformational Changes Associated with Flavin Reduction and Product Release. Biochemistry, 2012, 51, 10099-10108.	1.2	31
46	Structural Studies of Yeast Î”¹-Pyrroline-5-carboxylate Dehydrogenase (ALDH4A1): Active Site Flexibility and Oligomeric State. Biochemistry, 2014, 53, 1350-1359.	1.2	30
47	Protein/Protein Interactions in the Mammalian Heme Degradation Pathway. Journal of Biological Chemistry, 2014, 289, 29836-29858.	1.6	29
48	Evidence for Hysteretic Substrate Channeling in the Proline Dehydrogenase and Î”1-Pyrroline-5-carboxylate Dehydrogenase Coupled Reaction of Proline Utilization A (PutA). Journal of Biological Chemistry, 2014, 289, 3639-3651.	1.6	28
49	Evidence for Pipecolate Oxidase in Mediating Protection Against Hydrogen Peroxide Stress. Journal of Cellular Biochemistry, 2017, 118, 1678-1688.	1.2	28
50	Structures of Proline Utilization A (PutA) Reveal the Fold and Functions of the Aldehyde Dehydrogenase Superfamily Domain of Unknown Function. Journal of Biological Chemistry, 2016, 291, 24065-24075.	1.6	27
51	Chlorovirus PBCV-1 Encodes an Active Copper-Zinc Superoxide Dismutase. Journal of Virology, 2014, 88, 12541-12550.	1.5	22
52	In crystallo screening for proline analog inhibitors of the proline cycle enzyme PYCR1. Journal of Biological Chemistry, 2020, 295, 18316-18327.	1.6	22
53	Exploring the Proline-Dependent Conformational Change in the Multifunctional PutA Flavoprotein by Tryptophan Fluorescence Spectroscopyâ€. Biochemistry, 2005, 44, 12297-12306.	1.2	21
54	Structure and characterization of a class 3B proline utilization A: Ligand-induced dimerization and importance of the C-terminal domain for catalysis. Journal of Biological Chemistry, 2017, 292, 9652-9665.	1.6	21

#	Article	IF	Citations
55	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
56	Kinetic and Structural Characterization of Tunnel-Perturbing Mutants in <i>Bradyrhizobium japonicum</i> Proline Utilization A. Biochemistry, 2014, 53, 5150-5161.	1.2	19
57	Evidence That the C-Terminal Domain of a Type B PutA Protein Contributes to Aldehyde Dehydrogenase Activity and Substrate Channeling. Biochemistry, 2014, 53, 5661-5673.	1.2	18
58	Small-angle X-ray Scattering Studies of the Oligomeric State and Quaternary Structure of the Trifunctional Proline Utilization A (PutA) Flavoprotein from Escherichia coli. Journal of Biological Chemistry, 2011, 286, 43144-43153.	1.6	17
59	Involvement of the Î²3-Î±3 Loop of the Proline Dehydrogenase Domain in Allosteric Regulation of Membrane Association of Proline Utilization A. Biochemistry, 2013, 52, 4482-4491.	1.2	17
60	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
61	Electrochemical and Spectroscopic Properties of the Iron-Sulfur Flavoprotein from Methanosarcina thermophila. Journal of Biological Chemistry, 1998, 273, 26462-26469.	1.6	15
62	Probing a hydrogen bond pair and the FAD redox properties in the proline dehydrogenase domain of Escherichia coli PutA. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2004, 1701, 49-59.	1.1	14
63	Kinetic and thermodynamic analysis of Bradyrhizobium japonicum PutAâ€"membrane associations. Archives of Biochemistry and Biophysics, 2006, 445, 174-183.	1.4	14
64	Methods for determining the reduction potentials of flavin enzymes. Methods in Enzymology, 2019, 620, 1-25.	0.4	14
65	Solution structure of the <i>Pseudomonas putida</i> protein PpPutA45 and its DNA complex. Proteins: Structure, Function and Bioinformatics, 2009, 75, 12-27.	1.5	12
66	Covalent Modification of the Flavin in Proline Dehydrogenase by Thiazolidine-2-Carboxylate. ACS Chemical Biology, 2020, 15, 936-944.	1.6	10
67	Structural Basis for the Substrate Inhibition of Proline Utilization A by Proline. Molecules, 2018, 23, 32.	1.7	9
68	Disease variants of human Î"1-pyrroline-5-carboxylate reductase 2 (PYCR2). Archives of Biochemistry and Biophysics, 2021, 703, 108852.	1.4	9
69	Structural insights into the mechanism defining substrate affinity in Arabidopsis thaliana dUTPase: the role of tryptophan 93 in ligand orientation. BMC Research Notes, 2015, 8, 784.	0.6	7
70	Discovery of the Membrane Binding Domain in Trifunctional Proline Utilization A. Biochemistry, 2017, 56, 6292-6303.	1.2	7
71	Cautionary Tale of Using Tris(alkyl)phosphine Reducing Agents with NAD⁺-Dependent Enzymes. Biochemistry, 2020, 59, 3285-3289.	1.2	7
72	Engineering a trifunctional proline utilization A chimaera by fusing a DNA-binding domain to a bifunctional PutA. Bioscience Reports, 2016, 36, .	1.1	6

#	Article	IF	Citations
73	Structural analysis of prolines and hydroxyprolines binding to the l-glutamate-Î³-semialdehyde dehydrogenase active site of bifunctional proline utilization A. Archives of Biochemistry and Biophysics, 2021, 698, 108727.	1.4	6
74	Antioxidant Molecules and Redox Cofactors. , 0, , 11-47.		5
75	Identification of a Conserved Histidine As Being Critical for the Catalytic Mechanism and Functional Switching of the Multifunctional Proline Utilization A Protein. Biochemistry, 2017, 56, 3078-3088.	1.2	5
76	Structural basis for the stereospecific inhibition of the dual proline/hydroxyproline catabolic enzyme ALDH4A1 by transâ€4â€hydroxyâ€Lâ€proline. Protein Science, 2021, 30, 1714-1722.	3.1	4
77	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
78	Redox Modulation of Oligomeric State in Proline Utilization A. Biophysical Journal, 2018, 114, 2833-2843.	0.2	2
79	Photoinduced Covalent Irreversible Inactivation of Proline Dehydrogenase by S-Heterocycles. ACS Chemical Biology, 2021, 16, 2268-2279.	1.6	2
80	2 PutA and proline metabolism. , 2012, , 31-56.		1
81	Specialized Methods. , 0, , 227-284.		0
82	Pathological Processes Related to Redox. , 0, , 183-225.		0
83	Redox Metabolism and Life. , 0, , 1-9.		0
84	Redox Regulation of Physiological Processes. , 0, , 135-182.		0
85	An Evolutionary Strategy for Identification of Higher Order, Green Fluorescent Hostâ€"Guest Pairs Compatible with Living Systems. Chemistry - A European Journal, 2020, 26, 16721-16726.	1.7	0
86	Evidence for Proline Catabolic Enzymes in the Metabolism of Thiazolidine Carboxylates. Biochemistry, 2021, 60, 3610-3620.	1.2	0
87	Kinetics of human pyrroline-5-carboxylate reductase in l-thioproline metabolism. Amino Acids, 2021, 53, 1863-1874.	1.2	0