Diana M Downs

List of Publications by Year in descending order

93 papers	2,410 citations	201385 27 h-index	243296 44 g-index
94 all docs	94 docs citations	94 times ranked	1602 citing authors

#	Article	IF	Citations
1	Thiamin biosynthesis in prokaryotes. Archives of Microbiology, 1999, 171, 293-300.	1.0	277
2	Conserved YjgF Protein Family Deaminates Reactive Enamine/Imine Intermediates of Pyridoxal 5â€²-Phosphate (PLP)-dependent Enzyme Reactions. Journal of Biological Chemistry, 2012, 287, 3454-3461.	1.6	110
3	ThiC Is an [Fe-S] Cluster Protein That Requires AdoMet To Generate the 4-Amino-5-hydroxymethyl-2-methylpyrimidine Moiety in Thiamin Synthesis. Biochemistry, 2008, 47, 9054-9056.	1.2	74
4	Complex Metabolic Phenotypes Caused by a Mutation in yjgF , Encoding a Member of the Highly Conserved YER057c/YjgF Family of Proteins. Journal of Bacteriology, 1998, 180, 6519-6528.	1.0	72
5	Genomic and experimental evidence for multiple metabolic functions in the RidA/YjgF/YER057c/UK114 (Rid) protein family. BMC Genomics, 2015, 16, 382.	1.2	70
6	Metabolic Defects Caused by Mutations in the isc Gene Cluster in Salmonella enterica Serovar Typhimurium: Implications for Thiamine Synthesis. Journal of Bacteriology, 2000, 182, 3896-3903.	1.0	68
7	Characterization of thiL, Encoding Thiamin-monophosphate Kinase, in Salmonella typhimurium. Journal of Biological Chemistry, 1997, 272, 15702-15707.	1.6	63
8	RidA Proteins Prevent Metabolic Damage Inflicted by PLP-Dependent Dehydratases in All Domains of Life. MBio, 2013, 4, e00033-13.	1.8	63
9	Genetic Analysis of Metabolic Crosstalk and Its Impact on Thiamine Synthesis in Salmonella typhimurium. Genetics, 1996, 143, 37-44.	1.2	59
10	Reduced Transaminase B (IlvE) Activity Caused by the Lack of yjgF Is Dependent on the Status of Threonine Deaminase (IlvA) in Salmonella enterica Serovar Typhimurium. Journal of Bacteriology, 2004, 186, 803-810.	1.0	56
11	Arabidopsis and Maize RidA Proteins Preempt Reactive Enamine/Imine Damage to Branched-Chain Amino Acid Biosynthesis in Plastids Â Â. Plant Cell, 2014, 26, 3010-3022.	3.1	55
12	Understanding Microbial Metabolism. Annual Review of Microbiology, 2006, 60, 533-559.	2.9	48
13	Overexpression, purification and characterization of two pyrimidine kinases involved in the biosynthesis of thiamin: 4-amino-5-hydroxymethyl-2-methylpyrimidine kinase and 4-amino-5-hydroxymethyl-2-methylpyrimidine phosphate kinase. Tetrahedron, 1998, 54, 15983-15991.	1.0	47
14	YjgF Is Required for Isoleucine Biosynthesis whenSalmonella entericaIs Grown on Pyruvate Medium. Journal of Bacteriology, 2008, 190, 3057-3062.	1.0	44
15	In the Absence of RidA, Endogenous 2-Aminoacrylate Inactivates Alanine Racemases by Modifying the Pyridoxal 5â€²-Phosphate Cofactor. Journal of Bacteriology, 2013, 195, 3603-3609.	1.0	43
16	The Thiamine Biosynthetic Enzyme ThiC Catalyzes Multiple Turnovers and Is Inhibited by S-Adenosylmethionine (AdoMet) Metabolites. Journal of Biological Chemistry, 2013, 288, 30693-30699.	1.6	42
17	Mutational Analysis of ThiH, a Member of the Radical S-Adenosylmethionine (AdoMet) Protein Superfamily. Journal of Biological Chemistry, 2004, 279, 40505-40510.	1.6	39
18	The panE Gene, Encoding Ketopantoate Reductase, Maps at 10 Minutes and Is Allelic to apbA in Salmonella typhimurium. Journal of Bacteriology, 1998, 180, 4757-4759.	1.0	39

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19	Decreased coenzyme <scp>A</scp> levels in <scp>ridA</scp> mutant strains of <scp>S</scp>almonella enterica result from inactivated serine hydroxymethyltransferase. Molecular Microbiology, 2013, 89, 751-759.	1.2	38
20	Members of the YjgF/YER057c/UK114 Family of Proteins Inhibit Phosphoribosylamine Synthesis in Vitro. Journal of Biological Chemistry, 2010, 285, 34401-34407.	1.6	37
21	The STM4195 Gene Product (PanS) Transports Coenzyme A Precursors in Salmonella enterica. Journal of Bacteriology, 2015, 197, 1368-1377.	1.0	34
22	From microbiology to cancer biology: the Rid protein family prevents cellular damage caused by endogenously generated reactive nitrogen species. Molecular Microbiology, 2015, 96, 211-219.	1.2	34
23	Endogenous Synthesis of 2-Aminoacrylate Contributes to Cysteine Sensitivity in Salmonella enterica. Journal of Bacteriology, 2014, 196, 3335-3342.	1.0	33
24	Bacterial ApbC Protein Has Two Biochemical Activities That Are Required for in Vivo Function. Journal of Biological Chemistry, 2009, 284, 110-118.	1.6	31
25	ApbA, the Ketopantoate Reductase Enzyme of Salmonella typhimurium Is Required for the Synthesis of Thiamine via the Alternative Pyrimidine Biosynthetic Pathway. Journal of Biological Chemistry, 1998, 273, 5572-5576.	1.6	30
26	Metabolic Flux in Both the Purine Mononucleotide and Histidine Biosynthetic Pathways Can Influence Synthesis of the Hydroxymethyl Pyrimidine Moiety of Thiamine in Salmonella enterica. Journal of Bacteriology, 2002, 184, 6130-6137.	1.0	30
27	A connection between ironâ€“sulfur cluster metabolism and the biosynthesis of 4-amino-5-hydroxymethyl-2-methylpyrimidine pyrophosphate in Salmonella enterica. Microbiology (United Kingdom), 2006, 152, 2345-2353.	0.7	30
28	Reactive Enamines and Imines In Vivo: Lessons from the RidA Paradigm. Trends in Biochemical Sciences, 2019, 44, 849-860.	3.7	30
29	Thiamine biosynthesis can be used to dissect metabolic integration. Trends in Microbiology, 2010, 18, 240-247.	3.5	29
30	The Rhodanese Domain of ThiI Is Both Necessary and Sufficient for Synthesis of the Thiazole Moiety of Thiamine in Salmonella enterica. Journal of Bacteriology, 2011, 193, 4582-4587.	1.0	27
31	Oxidative stress and disruption of labile iron generate specific auxotrophic requirements in Salmonella enterica. Microbiology (United Kingdom), 2009, 155, 295-304.	0.7	26
32	2-Aminoacrylate Stress Induces a Context-Dependent Glycine Requirement in ridA Strains of Salmonella enterica. Journal of Bacteriology, 2016, 198, 536-543.	1.0	26
33	Conserved Pyridoxal 5'-Phosphate-Binding Protein YggS Impacts Amino Acid Metabolism through Pyridoxine 5'-Phosphate in Escherichia coli. Applied and Environmental Microbiology, 2019, 85, .	1.4	26
34	Reaction of AdoMet with ThiC Generates a Backbone Free Radical. Biochemistry, 2009, 48, 217-219.	1.2	25
35	PurF-Independent Phosphoribosyl Amine Formation in yjgF Mutants of Salmonella enterica Utilizes the Tryptophan Biosynthetic Enzyme Complex Anthranilate Synthase-Phosphoribosyltransferase. Journal of Bacteriology, 2006, 188, 6786-6792.	1.0	24
36	Members of the Rid protein family have broad imine deaminase activity and can accelerate the Pseudomonas aeruginosa D-arginine dehydrogenase (DauA) reaction in vitro. PLoS ONE, 2017, 12, e0185544.	1.1	24

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37	The Response to 2-Aminoacrylate Differs in Escherichia coli and Salmonella enterica, despite Shared Metabolic Components. Journal of Bacteriology, 2017, 199, .	1.0	23
38	Mmf1p Couples Amino Acid Metabolism to Mitochondrial DNA Maintenance in Saccharomyces cerevisiae. MBio, 2018, 9, .	1.8	23
39	RidA Proteins Protect against Metabolic Damage by Reactive Intermediates. Microbiology and Molecular Biology Reviews, 2020, 84, .	2.9	22
40	Anthranilate Phosphoribosyl Transferase (TrpD) Generates Phosphoribosylamine for Thiamine Synthesis from Enamines and Phosphoribosyl Pyrophosphate. ACS Chemical Biology, 2013, 8, 242-248.	1.6	21
41	Biosynthesis of the Pyrimidine Moiety of Thiamine Independent of the PurF Enzyme (Phosphoribosylpyrophosphate Amidotransferase) in Salmonella typhimurium : Incorporation of Stable Isotope-Labeled Glycine and Formate. Journal of Bacteriology, 1999, 181, 841-848.	1.0	21
42	Lâ€2,3â€diaminopropionate generates diverse metabolic stresses in Salmonella enterica. Molecular Microbiology, 2016, 101, 210-223.	1.2	20
43	An Unexpected Route to an Essential Cofactor: Escherichia coli Relies on Threonine for Thiamine Biosynthesis. MBio, 2016, 7, e01840-15.	1.8	20
44	Pyridoxal Reductase, PdxI, Is Critical for Salvage of Pyridoxal in Escherichia coli. Journal of Bacteriology, 2020, 202, .	1.0	20
45	Inhibition of Fructose-1,6-bisphosphatase by Aminoimidazole Carboxamide Ribotide Prevents Growth of Salmonella enterica purH Mutants on Glycerol. Journal of Biological Chemistry, 2006, 281, 33892-33899.	1.6	19
46	Inhibition of glycine cleavage system by pyridoxine 5â€²â€phosphate causes synthetic lethality inglyA yggSandserA yggSinEscherichia coli. Molecular Microbiology, 2020, 113, 270-284.	1.2	19
47	Suppressor Analyses Identify Threonine as a Modulator of ridA Mutant Phenotypes in Salmonella enterica. PLoS ONE, 2012, 7, e43082.	1.1	19
48	Untargeted metabolomics confirms and extends the understanding of the impact of aminoimidazole carboxamide ribotide (AICAR) in the metabolic network of Salmonella enterica. Microbial Cell, 2018, 5, 74-87.	1.4	19
49	A Brassica cDNA clone encoding a bifunctional hydroxymethylpyrimidine kinase/thiamin-phosphate pyrophosphorylase involved in thiamin biosynthesis. Plant Molecular Biology, 1998, 37, 955-966.	2.0	18
50	Anthranilate Synthase Can Generate Sufficient Phosphoribosyl Amine for Thiamine Synthesis in Salmonella enterica. Journal of Bacteriology, 2003, 185, 5125-5132.	1.0	18
51	Der f 34, a Novel Major House Dust Mite Allergen Belonging to a Highly Conserved Rid/YjgF/YER057c/UK114 Family of Imine Deaminases. Journal of Biological Chemistry, 2016, 291, 21607-21615.	1.6	17
52	SNZ3 Encodes a PLP Synthase Involved in Thiamine Synthesis in Saccharomyces cerevisiae. G3: Genes, Genomes, Genetics, 2019, 9, 335-344.	0.8	17
53	Cj1388 Is a RidA Homolog and Is Required for Flagella Biosynthesis and/or Function in Campylobacter jejuni. Frontiers in Microbiology, 2019, 10, 2058.	1.5	15
54	The Role of YggS in Vitamin B₆ Homeostasis in Salmonella enterica Is Informed by Heterologous Expression of Yeast SNZ3. Journal of Bacteriology, 2020, 202, .	1.0	15

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55	Phosphoribosylpyrophosphate synthetase (PrsA) variants alter cellular pools of ribose 5-phosphate and influence thiamine synthesis in Salmonella enterica. Microbiology (United Kingdom), 2010, 156, 950-959.	0.7	14
56	Endogenously generated 2-aminoacrylate inhibits motility in Salmonella enterica. Scientific Reports, 2017, 7, 12971.	1.6	14
57	Putative Horizontally Acquired Genes, Highly Transcribed during Yersinia pestis Flea Infection, Are Induced by Hyperosmotic Stress and Function in Aromatic Amino Acid Metabolism. Journal of Bacteriology, 2020, 202, .	1.0	14
58	The stm4066 Gene Product of Salmonella enterica Serovar Typhimurium Has Aminoimidazole Riboside (AIRs) Kinase Activity and Allows AIRs To Satisfy the Thiamine Requirement of pur Mutant Strains. Journal of Bacteriology, 2003, 185, 332-339.	1.0	12
59	Plasticity in the Purineâ€“Thiamine Metabolic Network of Salmonella. Genetics, 2011, 187, 623-631.	1.2	11
60	Integrated Metabolomics and Transcriptomics Suggest the Global Metabolic Response to 2-Aminoacrylate Stress in Salmonella enterica. Metabolites, 2020, 10, 12.	1.3	11
61	The three-legged stool of understanding metabolism: integrating metabolomics with biochemical genetics and computational modeling. AIMS Microbiology, 2018, 4, 289-303.	1.0	11
62	The Cysteine Desulfhydrase CdsH Is Conditionally Required for Sulfur Mobilization to the Thiamine Thiazole in Salmonella enterica. Journal of Bacteriology, 2014, 196, 3964-3970.	1.0	10
63	Aminoimidazole Carboxamide Ribotide Exerts Opposing Effects on Thiamine Synthesis in Salmonella enterica. Journal of Bacteriology, 2015, 197, 2821-2830.	1.0	10
64	PA5339, a RidA Homolog, Is Required for Full Growth in Pseudomonas aeruginosa. Journal of Bacteriology, 2018, 200, .	1.0	10
65	A Mutant Allele of rpoD Results in Increased Conversion of Aminoimidazole Ribotide to Hydroxymethyl Pyrimidine in Salmonella enterica. Journal of Bacteriology, 2004, 186, 4034-4037.	1.0	9
66	Glutamine Phosphoribosylpyrophosphate Amidotransferase-independent Phosphoribosyl Amine Synthesis from Ribose 5-Phosphate and Glutamine or Asparagine. Journal of Biological Chemistry, 2007, 282, 28379-28384.	1.6	9
67	Perturbations in Histidine Biosynthesis Uncover Robustness in the Metabolic Network of Salmonella enterica. PLoS ONE, 2012, 7, e48207.	1.1	9
68	Amino-4-Imidazolecarboxamide Ribotide Directly Inhibits Coenzyme A Biosynthesis in Salmonella enterica. Journal of Bacteriology, 2014, 196, 772-779.	1.0	9
69	Analyses of variants of the Ser/Thr dehydratase IlvA provide insight into 2-aminoacrylate metabolism in Salmonella enterica. Journal of Biological Chemistry, 2018, 293, 19240-19249.	1.6	9
70	Analysis of ThiC Variants in the Context of the Metabolic Network of Salmonella enterica. Journal of Bacteriology, 2012, 194, 6088-6095.	1.0	8
71	Expression of Pyridoxal 5â€²-Phosphate-Independent Racemases Can Reduce 2-Aminoacrylate Stress in Salmonella enterica. Journal of Bacteriology, 2018, 200, .	1.0	6
72	Increased Activity of Cystathionine Î²-Lyase Suppresses 2-Aminoacrylate Stress in Salmonella enterica. Journal of Bacteriology, 2018, 200, .	1.0	6

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73	Proton Nuclear Magnetic Resonance Metabolomics Corroborates Serine Hydroxymethyltransferase as the Primary Target of 2-Aminoacrylate in a ridA Mutant of Salmonella enterica. MSystems, 2020, 5, .	1.7	6
74	Loss of YggS (COG0325) impacts aspartate metabolism in Salmonella enterica. Molecular Microbiology, 2021, 116, 1232-1240.	1.2	6
75	Metabolic network structure and function in bacteria goes beyond conserved enzyme components. Microbial Cell, 2016, 3, 260-262.	1.4	6
76	Bacterial physiology: Life without an essential coenzyme. Nature Microbiology, 2017, 2, 16252.	5.9	5
77	Perturbation of the metabolic network in Salmonella enterica reveals cross-talk between coenzyme A and thiamine pathways. PLoS ONE, 2018, 13, e0197703.	1.1	5
78	Absence of MMF1 disrupts heme biosynthesis by targeting Hem1p in Saccharomyces cerevisiae. Yeast, 2021, 38, 615-624.	0.8	5
79	The Rid family member RutC of Escherichia coli is a 3-aminoacrylate deaminase. Journal of Biological Chemistry, 2021, 296, 100651.	1.6	5
80	Mechanism of Pyridoxine 5â€²-Phosphate Accumulation in Pyridoxal 5â€²-Phosphate-Binding Protein Deficiency. Journal of Bacteriology, 2022, 204, JB0052121.	1.0	5
81	Probing the Complex System of Metabolic Integration. Progress in Molecular Biology and Translational Science, 2005, 80, 43-94.	1.9	4
82	An Allele of gyrA Prevents Salmonella enterica Serovar Typhimurium from Using Succinate as a Carbon Source. Journal of Bacteriology, 2006, 188, 3126-3129.	1.0	4
83	Two novel fish paralogs provide insights into the Rid family of imine deaminases active in pre-empting enamine/imine metabolic damage. Scientific Reports, 2020, 10, 10135.	1.6	4
84	2-Aminoacrylate stress damages diverse PLP-dependent enzymes inÂvivo. Journal of Biological Chemistry, 2022, 298, 101970.	1.6	4
85	Induction of the Sugar-Phosphate Stress Response Allows Saccharomyces cerevisiae 2-Methyl-4-Amino-5-Hydroxymethylpyrimidine Phosphate Synthase To Function in Salmonella enterica. Journal of Bacteriology, 2015, 197, 3554-3562.	1.0	3
86	An Unexpected Role for the Periplasmic Phosphatase PhoN in the Salvage of B ₆ Vitamers in Salmonella enterica. Applied and Environmental Microbiology, 2021, 87, .	1.4	3
87	Genomics and bacterial metabolism. Current Issues in Molecular Biology, 2003, 5, 17-25.	1.0	3
88	The Cysteine Desulfurase IscS Is a Significant Target of 2-Aminoacrylate Damage in Pseudomonas aeruginosa. MBio, 0, , .	1.8	3
89	Balancing cost and benefit: How E. coli cleverly averts disulfide stress caused by cystine. Molecular Microbiology, 2020, 113, 1-3.	1.2	2
90	Functional characterization of the HMPâ€P synthase of Legionella pneumophila (Lpg1565). Molecular Microbiology, 2021, 115, 539-553.	1.2	2

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91	Pyridoxal and Î±-Ketoglutarate Independently Improve Function of Saccharomyces cerevisiae Thi5 in the Metabolic Network of Salmonella enterica. Journal of Bacteriology, 2022, 204, JB0045021.	1.0	2
92	Genetic analysis using vitamin B 6 antagonist 4-deoxypyridoxine uncovers a connection between pyridoxal 5â€²-phosphate and coenzyme A metabolism in Salmonella enterica. Journal of Bacteriology, 2022, , jb0060721.	1.0	1
93	Serendipity Reveals the Function and Physiological Role of a Large Family of Proteins. Journal of Bacteriology, 2022, 204, JB0055621.	1.0	1