

Diana M Downs

List of Publications by Year in descending order

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papers

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citations

201385

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#	ARTICLE	IF	CITATIONS
1	Pyridoxal and α -Ketoglutarate Independently Improve Function of <i>Saccharomyces cerevisiae</i> Thi5 in the Metabolic Network of <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2022, 204, JB0045021.	1.0	2
2	Mechanism of Pyridoxine 5 α -Phosphate Accumulation in Pyridoxal 5 α -Phosphate-Binding Protein Deficiency. <i>Journal of Bacteriology</i> , 2022, 204, JB0052121.	1.0	5
3	Genetic analysis using vitamin B6 antagonist 4-deoxypyridoxine uncovers a connection between pyridoxal 5 α -phosphate and coenzyme A metabolism in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2022, , jb0060721.	1.0	1
4	Serendipity Reveals the Function and Physiological Role of a Large Family of Proteins. <i>Journal of Bacteriology</i> , 2022, 204, JB0055621.	1.0	1
5	2-Aminoacrylate stress damages diverse PLP-dependent enzymes <i>in vivo</i> . <i>Journal of Biological Chemistry</i> , 2022, 298, 101970.	1.6	4
6	Functional characterization of the HMP α synthase of <i>Legionella pneumophila</i> (Lpg1565). <i>Molecular Microbiology</i> , 2021, 115, 539-553.	1.2	2
7	An Unexpected Role for the Periplasmic Phosphatase PhoN in the Salvage of B ₆ Vitamins in <i>Salmonella enterica</i> . <i>Applied and Environmental Microbiology</i> , 2021, 87, .	1.4	3
8	Loss of YggS (COG0325) impacts aspartate metabolism in <i>Salmonella enterica</i> . <i>Molecular Microbiology</i> , 2021, 116, 1232-1240.	1.2	6
9	Absence of MMF1 disrupts heme biosynthesis by targeting Hem1p in <i>Saccharomyces cerevisiae</i> . <i>Yeast</i> , 2021, 38, 615-624.	0.8	5
10	The Rid family member RutC of <i>Escherichia coli</i> is a 3-aminoacrylate deaminase. <i>Journal of Biological Chemistry</i> , 2021, 296, 100651.	1.6	5
11	Inhibition of glycine cleavage system by pyridoxine 5 α -phosphate causes synthetic lethality <i>inglyA yggS</i> and <i>serA yggS</i> in <i>Escherichia coli</i> . <i>Molecular Microbiology</i> , 2020, 113, 270-284.	1.2	19
12	Balancing cost and benefit: How <i>E. coli</i> cleverly averts disulfide stress caused by cystine. <i>Molecular Microbiology</i> , 2020, 113, 1-3.	1.2	2
13	Integrated Metabolomics and Transcriptomics Suggest the Global Metabolic Response to 2-Aminoacrylate Stress in <i>Salmonella enterica</i> . <i>Metabolites</i> , 2020, 10, 12.	1.3	11
14	Two novel fish paralogs provide insights into the Rid family of imine deaminases active in pre-empting enamine/imine metabolic damage. <i>Scientific Reports</i> , 2020, 10, 10135.	1.6	4
15	RidA Proteins Protect against Metabolic Damage by Reactive Intermediates. <i>Microbiology and Molecular Biology Reviews</i> , 2020, 84, .	2.9	22
16	The Role of YggS in Vitamin B ₆ Homeostasis in <i>Salmonella enterica</i> Is Informed by Heterologous Expression of Yeast <i>SNZ3</i> . <i>Journal of Bacteriology</i> , 2020, 202, .	1.0	15
17	Proton Nuclear Magnetic Resonance Metabolomics Corroborates Serine Hydroxymethyltransferase as the Primary Target of 2-Aminoacrylate in a <i>ridA</i> Mutant of <i>Salmonella enterica</i> . <i>MSystems</i> , 2020, 5, .	1.7	6
18	Putative Horizontally Acquired Genes, Highly Transcribed during <i>Yersinia pestis</i> Flea Infection, Are Induced by Hyperosmotic Stress and Function in Aromatic Amino Acid Metabolism. <i>Journal of Bacteriology</i> , 2020, 202, .	1.0	14

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19	Pyridoxal Reductase, PdxI, Is Critical for Salvage of Pyridoxal in <i>Escherichia coli</i> . <i>Journal of Bacteriology</i> , 2020, 202, .	1.0	20
20	Cj1388 Is a RidA Homolog and Is Required for Flagella Biosynthesis and/or Function in <i>Campylobacter jejuni</i> . <i>Frontiers in Microbiology</i> , 2019, 10, 2058.	1.5	15
21	Reactive Enamines and Imines In Vivo: Lessons from the RidA Paradigm. <i>Trends in Biochemical Sciences</i> , 2019, 44, 849-860.	3.7	30
22	Conserved Pyridoxal 5'-Phosphate-Binding Protein YggS Impacts Amino Acid Metabolism through Pyridoxine 5'-Phosphate in <i>Escherichia coli</i> . <i>Applied and Environmental Microbiology</i> , 2019, 85, .	1.4	26
23	<i>SNZ3</i> Encodes a PLP Synthase Involved in Thiamine Synthesis in <i>Saccharomyces cerevisiae</i> . <i>G3: Genes, Genomes, Genetics</i> , 2019, 9, 335-344.	0.8	17
24	Mmf1p Couples Amino Acid Metabolism to Mitochondrial DNA Maintenance in <i>Saccharomyces cerevisiae</i> . <i>MBio</i> , 2018, 9, .	1.8	23
25	Expression of Pyridoxal 5'-Phosphate-Independent Racemases Can Reduce 2-Aminoacrylate Stress in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2018, 200, .	1.0	6
26	Increased Activity of Cystathionine β -Lyase Suppresses 2-Aminoacrylate Stress in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2018, 200, .	1.0	6
27	Analyses of variants of the Ser/Thr dehydratase <i>IlvA</i> provide insight into 2-aminoacrylate metabolism in <i>Salmonella enterica</i> . <i>Journal of Biological Chemistry</i> , 2018, 293, 19240-19249.	1.6	9
28	PA5339, a RidA Homolog, Is Required for Full Growth in <i>Pseudomonas aeruginosa</i> . <i>Journal of Bacteriology</i> , 2018, 200, .	1.0	10
29	Perturbation of the metabolic network in <i>Salmonella enterica</i> reveals cross-talk between coenzyme A and thiamine pathways. <i>PLoS ONE</i> , 2018, 13, e0197703.	1.1	5
30	Untargeted metabolomics confirms and extends the understanding of the impact of aminoimidazole carboxamide ribotide (AICAR) in the metabolic network of <i>Salmonella enterica</i> . <i>Microbial Cell</i> , 2018, 5, 74-87.	1.4	19
31	The three-legged stool of understanding metabolism: integrating metabolomics with biochemical genetics and computational modeling. <i>AIMS Microbiology</i> , 2018, 4, 289-303.	1.0	11
32	The Response to 2-Aminoacrylate Differs in <i>Escherichia coli</i> and <i>Salmonella enterica</i> , despite Shared Metabolic Components. <i>Journal of Bacteriology</i> , 2017, 199, .	1.0	23
33	Bacterial physiology: Life without an essential coenzyme. <i>Nature Microbiology</i> , 2017, 2, 16252.	5.9	5
34	Endogenously generated 2-aminoacrylate inhibits motility in <i>Salmonella enterica</i> . <i>Scientific Reports</i> , 2017, 7, 12971.	1.6	14
35	Members of the Rid protein family have broad imine deaminase activity and can accelerate the <i>Pseudomonas aeruginosa</i> D-arginine dehydrogenase (DauA) reaction in vitro. <i>PLoS ONE</i> , 2017, 12, e0185544.	1.1	24
36	β -diaminopropionate generates diverse metabolic stresses in <i>Salmonella enterica</i> . <i>Molecular Microbiology</i> , 2016, 101, 210-223.	1.2	20

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37	2-Aminoacrylate Stress Induces a Context-Dependent Glycine Requirement in <i>ridA</i> Strains of <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2016, 198, 536-543.	1.0	26
38	An Unexpected Route to an Essential Cofactor: <i>Escherichia coli</i> Relies on Threonine for Thiamine Biosynthesis. <i>MBio</i> , 2016, 7, e01840-15.	1.8	20
39	Der f 34, a Novel Major House Dust Mite Allergen Belonging to a Highly Conserved <i>Rid/YjgF/YER057c/UK114</i> Family of Imine Deaminases. <i>Journal of Biological Chemistry</i> , 2016, 291, 21607-21615.	1.6	17
40	Metabolic network structure and function in bacteria goes beyond conserved enzyme components. <i>Microbial Cell</i> , 2016, 3, 260-262.	1.4	6
41	Genomic and experimental evidence for multiple metabolic functions in the <i>RidA/YjgF/YER057c/UK114</i> (<i>Rid</i>) protein family. <i>BMC Genomics</i> , 2015, 16, 382.	1.2	70
42	Induction of the Sugar-Phosphate Stress Response Allows <i>Saccharomyces cerevisiae</i> 2-Methyl-4-Amino-5-Hydroxymethylpyrimidine Phosphate Synthase To Function in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2015, 197, 3554-3562.	1.0	3
43	The STM4195 Gene Product (<i>PanS</i>) Transports Coenzyme A Precursors in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2015, 197, 1368-1377.	1.0	34
44	From microbiology to cancer biology: the <i>Rid</i> protein family prevents cellular damage caused by endogenously generated reactive nitrogen species. <i>Molecular Microbiology</i> , 2015, 96, 211-219.	1.2	34
45	Aminoimidazole Carboxamide Ribotide Exerts Opposing Effects on Thiamine Synthesis in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2015, 197, 2821-2830.	1.0	10
46	<i>Arabidopsis</i> and Maize <i>RidA</i> Proteins Preempt Reactive Enamine/Imine Damage to Branched-Chain Amino Acid Biosynthesis in Plastids. <i>Plant Cell</i> , 2014, 26, 3010-3022.	3.1	55
47	The Cysteine Desulfhydrase <i>CdsH</i> Is Conditionally Required for Sulfur Mobilization to the Thiamine Thiazole in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2014, 196, 3964-3970.	1.0	10
48	Endogenous Synthesis of 2-Aminoacrylate Contributes to Cysteine Sensitivity in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2014, 196, 3335-3342.	1.0	33
49	Amino-4-Imidazolecarboxamide Ribotide Directly Inhibits Coenzyme A Biosynthesis in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2014, 196, 772-779.	1.0	9
50	Anthranilate Phosphoribosyl Transferase (<i>TrpD</i>) Generates Phosphoribosylamine for Thiamine Synthesis from Enamines and Phosphoribosyl Pyrophosphate. <i>ACS Chemical Biology</i> , 2013, 8, 242-248.	1.6	21
51	<i>RidA</i> Proteins Prevent Metabolic Damage Inflicted by PLP-Dependent Dehydratases in All Domains of Life. <i>MBio</i> , 2013, 4, e00033-13.	1.8	63
52	Decreased coenzyme <i>A</i> levels in <i>ridA</i> mutant strains of <i>Salmonella enterica</i> result from inactivated serine hydroxymethyltransferase. <i>Molecular Microbiology</i> , 2013, 89, 751-759.	1.2	38
53	In the Absence of <i>RidA</i> , Endogenous 2-Aminoacrylate Inactivates Alanine Racemases by Modifying the Pyridoxal 5'-Phosphate Cofactor. <i>Journal of Bacteriology</i> , 2013, 195, 3603-3609.	1.0	43
54	The Thiamine Biosynthetic Enzyme <i>ThiC</i> Catalyzes Multiple Turnovers and Is Inhibited by S-Adenosylmethionine (<i>AdoMet</i>) Metabolites. <i>Journal of Biological Chemistry</i> , 2013, 288, 30693-30699.	1.6	42

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55	Analysis of ThiC Variants in the Context of the Metabolic Network of Salmonella enterica. Journal of Bacteriology, 2012, 194, 6088-6095.	1.0	8
56	Conserved YjgF Protein Family Deaminates Reactive Enamine/Imine Intermediates of Pyridoxal 5-Phosphate (PLP)-dependent Enzyme Reactions. Journal of Biological Chemistry, 2012, 287, 3454-3461.	1.6	110
57	Perturbations in Histidine Biosynthesis Uncover Robustness in the Metabolic Network of Salmonella enterica. PLoS ONE, 2012, 7, e48207.	1.1	9
58	Suppressor Analyses Identify Threonine as a Modulator of ridA Mutant Phenotypes in Salmonella enterica. PLoS ONE, 2012, 7, e43082.	1.1	19
59	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
60	Plasticity in the Purine-Thiamine Metabolic Network of Salmonella. Genetics, 2011, 187, 623-631.	1.2	11
61	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
62	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
63	Thiamine biosynthesis can be used to dissect metabolic integration. Trends in Microbiology, 2010, 18, 240-247.	3.5	29
64	Oxidative stress and disruption of labile iron generate specific auxotrophic requirements in Salmonella enterica. Microbiology (United Kingdom), 2009, 155, 295-304.	0.7	26
65	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
66	Reaction of AdoMet with ThiC Generates a Backbone Free Radical. Biochemistry, 2009, 48, 217-219.	1.2	25
67	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
68	YjgF Is Required for Isoleucine Biosynthesis when Salmonella enterica Is Grown on Pyruvate Medium. Journal of Bacteriology, 2008, 190, 3057-3062.	1.0	44
69	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
70	Understanding Microbial Metabolism. Annual Review of Microbiology, 2006, 60, 533-559.	2.9	48
71	A connection between iron-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
72	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

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73	Inhibition of Fructose-1,6-bisphosphatase by Aminoimidazole Carboxamide Ribotide Prevents Growth of <i>Salmonella enterica</i> purH Mutants on Glycerol. <i>Journal of Biological Chemistry</i> , 2006, 281, 33892-33899.	1.6	19
74	PurF-Independent Phosphoribosyl Amine Formation in yjgF Mutants of <i>Salmonella enterica</i> Utilizes the Tryptophan Biosynthetic Enzyme Complex Anthranilate Synthase-Phosphoribosyltransferase. <i>Journal of Bacteriology</i> , 2006, 188, 6786-6792.	1.0	24
75	Probing the Complex System of Metabolic Integration. <i>Progress in Molecular Biology and Translational Science</i> , 2005, 80, 43-94.	1.9	4
76	A Mutant Allele of rpoD Results in Increased Conversion of Aminoimidazole Ribotide to Hydroxymethyl Pyrimidine in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2004, 186, 4034-4037.	1.0	9
77	Reduced Transaminase B (IlvE) Activity Caused by the Lack of yjgF Is Dependent on the Status of Threonine Deaminase (IlvA) in <i>Salmonella enterica</i> Serovar Typhimurium. <i>Journal of Bacteriology</i> , 2004, 186, 803-810.	1.0	56
78	Mutational Analysis of ThiH, a Member of the Radical S-Adenosylmethionine (AdoMet) Protein Superfamily. <i>Journal of Biological Chemistry</i> , 2004, 279, 40505-40510.	1.6	39
79	The stm4066 Gene Product of <i>Salmonella enterica</i> Serovar Typhimurium Has Aminoimidazole Riboside (AIRs) Kinase Activity and Allows AIRs To Satisfy the Thiamine Requirement of pur Mutant Strains. <i>Journal of Bacteriology</i> , 2003, 185, 332-339.	1.0	12
80	Anthranilate Synthase Can Generate Sufficient Phosphoribosyl Amine for Thiamine Synthesis in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2003, 185, 5125-5132.	1.0	18
81	Genomics and bacterial metabolism. <i>Current Issues in Molecular Biology</i> , 2003, 5, 17-25.	1.0	3
82	Metabolic Flux in Both the Purine Mononucleotide and Histidine Biosynthetic Pathways Can Influence Synthesis of the Hydroxymethyl Pyrimidine Moiety of Thiamine in <i>Salmonella enterica</i> . <i>Journal of Bacteriology</i> , 2002, 184, 6130-6137.	1.0	30
83	Metabolic Defects Caused by Mutations in the isc Gene Cluster in <i>Salmonella enterica</i> Serovar Typhimurium: Implications for Thiamine Synthesis. <i>Journal of Bacteriology</i> , 2000, 182, 3896-3903.	1.0	68
84	Thiamin biosynthesis in prokaryotes. <i>Archives of Microbiology</i> , 1999, 171, 293-300.	1.0	277
85	Biosynthesis of the Pyrimidine Moiety of Thiamine Independent of the PurF Enzyme (Phosphoribosylpyrophosphate Amidotransferase) in <i>Salmonella typhimurium</i> : Incorporation of Stable Isotope-Labeled Glycine and Formate. <i>Journal of Bacteriology</i> , 1999, 181, 841-848.	1.0	21
86	A Brassica cDNA clone encoding a bifunctional hydroxymethylpyrimidine kinase/thiamin-phosphate pyrophosphorylase involved in thiamin biosynthesis. <i>Plant Molecular Biology</i> , 1998, 37, 955-966.	2.0	18
87	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. <i>Tetrahedron</i> , 1998, 54, 15983-15991.	1.0	47
88	ApbA, the Ketopantoate Reductase Enzyme of <i>Salmonella typhimurium</i> Is Required for the Synthesis of Thiamine via the Alternative Pyrimidine Biosynthetic Pathway. <i>Journal of Biological Chemistry</i> , 1998, 273, 5572-5576.	1.6	30
89	The panE Gene, Encoding Ketopantoate Reductase, Maps at 10 Minutes and Is Allelic to apbA in <i>Salmonella typhimurium</i> . <i>Journal of Bacteriology</i> , 1998, 180, 4757-4759.	1.0	39
90	Complex Metabolic Phenotypes Caused by a Mutation in yjgF, Encoding a Member of the Highly Conserved YER057c/YjgF Family of Proteins. <i>Journal of Bacteriology</i> , 1998, 180, 6519-6528.	1.0	72

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91	Characterization of thiL, Encoding Thiamin-monophosphate Kinase, in <i>Salmonella typhimurium</i> . <i>Journal of Biological Chemistry</i> , 1997, 272, 15702-15707.	1.6	63
92	Genetic Analysis of Metabolic Crosstalk and Its Impact on Thiamine Synthesis in <i>Salmonella typhimurium</i> . <i>Genetics</i> , 1996, 143, 37-44.	1.2	59
93	The Cysteine Desulfurase IscS Is a Significant Target of 2-Aminoacrylate Damage in <i>Pseudomonas aeruginosa</i> . <i>MBio</i> , 0, , .	1.8	3