Andrew D Hanson

List of Publications by Year
in descending order

110	7,844	71102 41	53230 85
papers	citations	h-index	g-index

116	116	116	9623
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Using continuous directed evolution to improve enzymes for plant applications. Plant Physiology, 2022, 188, 971-983.	4.8	18
2	Chemical-damage MINE: A database of curated and predicted spontaneous metabolic reactions. Metabolic Engineering, 2022, 69, 302-312.	7.0	5
3	In vivo hypermutation and continuous evolution. Nature Reviews Methods Primers, 2022, 2, .	21.2	39
4	Metabolite Damage and Damage Control in a Minimal Genome. MBio, 2022, 13, .	4.1	10
5	The number of catalytic cycles in an enzymeâ€™s lifetime and why it matters to metabolic engineering. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	41
6	The Thiamin-Requiring 3 Mutation of Arabidopsis 5-Deoxyxylulose-Phosphate Synthase 1 Highlights How the Thiamin Economy Impacts the Methylerythritol 4-Phosphate Pathway. Frontiers in Plant Science, 2021, 12, 721391.	3.6	3
7	Structure and function of aerotolerant, multiple-turnover THI4 thiazole synthases. Biochemical Journal, 2021, 478, 3265-3279.	3.7	6
8	The Moderately (D)efficient Enzyme: Catalysis-Related Damage <i>In Vivo</i> and Its Repair. Biochemistry, 2021, 60, 3555-3565.	2.5	5
9	A Core Metabolome Response of Maize Leaves Subjected to Long-Duration Abiotic Stresses. Metabolites, 2021, 11, 797.	2.9	17
10	Construction and applications of a B vitamin genetic resource for investigation of vitaminâ€dependent metabolism in maize. Plant Journal, 2020, 101, 442-454.	5.7	9
11	An Enzyme Containing the Conserved Domain of Unknown Function DUF62 Acts as a Stereoselective (<i>R_s,S_c</i>)â€<i>S</i>â€Adenosylmethionine Hydrolase. ChemBioChem, 2020, 21, 3495-3499.	2.6	2
12	Potential for Applying Continuous Directed Evolution to Plant Enzymes: An Exploratory Study. Life, 2020, 10, 179.	2.4	20
13	Enzymes as Parts in Need of Replacement â€“ and How to Extend Their Working Life. Trends in Plant Science, 2020, 25, 661-669.	8.8	20
14	Thioproline formation as a driver of formaldehyde toxicity in <i>Escherichia coli</i>. Biochemical Journal, 2020, 477, 1745-1757.	3.7	10
15	Bioinformatic and experimental evidence for suicidal and catalytic plant THI4s. Biochemical Journal, 2020, 477, 2055-2069.	3.7	24
16	The metabolite repair enzyme Nit1 is a dual-targeted amidase that disposes of damaged glutathione in <i>Arabidopsis</i>. Biochemical Journal, 2019, 476, 683-697.	3.7	13
17	Engineering Strategies to Boost Crop Productivity by Cutting Respiratory Carbon Loss. Plant Cell, 2019, 31, 297-314.	6.6	86
18	Focus Issue Editorial: Synthetic Biology. Plant Physiology, 2019, 179, 772-774.	4.8	4

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19	Rethinking the PDH Bypass and GABA Shunt as Thiamin-Deficiency Workarounds. Plant Physiology, 2019, 181, 389-393.	4.8	16
20	Revolutionizing agriculture with synthetic biology. Nature Plants, 2019, 5, 1207-1210.	9.3	100
21	Parts-Prospecting for a High-Efficiency Thiamin Thiazole Biosynthesis Pathway. Plant Physiology, 2019, 179, 958-968.	4.8	24
22	Carboxythiazole is a key microbial nutrient currency and critical component of thiamin biosynthesis. Scientific Reports, 2018, 8, 5940.	3.3	20
23	Evidence that the metabolite repair enzyme NAD(P)HX epimerase has a moonlighting function. Bioscience Reports, 2018, 38, .	2.4	20
24	Identification of a metabolic disposal route for the oncometabolite S-(2-succino)cysteine in Bacillus subtilis. Journal of Biological Chemistry, 2018, 293, 8255-8263.	3.4	18
25	A plastidial pantoate transporter with a potential role in pantothenate synthesis. Biochemical Journal, 2018, 475, 813-825.	3.7	13
26	Redesigning thiamin synthesis: Prospects and potential payoffs. Plant Science, 2018, 273, 92-99.	3.6	44
27	A Tale of Two Concepts: Harmonizing the Free Radical and Antagonistic Pleiotropy Theories of Aging. Antioxidants and Redox Signaling, 2018, 29, 1003-1017.	5.4	27
28	An unusual diphosphatase from the PhnP family cleaves reactive FAD photoproducts. Biochemical Journal, 2018, 475, 261-272.	3.7	3
29	Newly-discovered enzymes that function in metabolite damage-control. Current Opinion in Chemical Biology, 2018, 47, 101-108.	6.1	30
30	Comparative Genomics â˜†. , 2018, , .		2
31	Plant metabolic engineering in the synthetic biology era: plant chassis selection. Plant Cell Reports, 2018, 37, 1357-1358.	5.6	9
32	Synthetic biology meets plant metabolism. Plant Science, 2018, 273, 1-2.	3.6	10
33	Salvage of the 5-deoxyribose byproduct of radical SAM enzymes. Nature Communications, 2018, 9, 3105.	12.8	15
34	The PLUTO plastidial nucleobase transporter also transports the thiamin precursor hydroxymethylpyrimidine. Bioscience Reports, 2018, 38, .	2.4	13
35	Non-enzymatic molecular damage as a prototypic driver of aging. Journal of Biological Chemistry, 2017, 292, 6029-6038.	3.4	57
36	Metabolite damage and repair in metabolic engineering design. Metabolic Engineering, 2017, 44, 150-159.	7.0	43

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37	Discovery of a widespread prokaryotic 5-oxoprolinase that was hiding in plain sight. Journal of Biological Chemistry, 2017, 292, 16360-16367.	3.4	41
38	A strictly monofunctional bacterial hydroxymethylpyrimidine phosphate kinase precludes damaging errors in thiamin biosynthesis. Biochemical Journal, 2017, 474, 2887-2895.	3.7	6
39	Experimental and Metabolic Modeling Evidence for a Folate-Cleaving Side-Activity of Ketopantoate Hydroxymethyltransferase (PanB). Frontiers in Microbiology, 2016, 7, 431.	3.5	6
40	Arabidopsis <i>TH2</i> Encodes the Orphan Enzyme Thiamin Monophosphate Phosphatase. Plant Cell, 2016, 28, 2683-2696.	6.6	42
41	A Guardian Angel Phosphatase for Mainline Carbon Metabolism. Trends in Biochemical Sciences, 2016, 41, 893-894.	7.5	7
42	Systematic identification and analysis of frequent gene fusion events in metabolic pathways. BMC Genomics, 2016, 17, 473.	2.8	13
43	â€˜Nothing of chemistry disappears in biologyâ€™: the Top 30 damage-prone endogenous metabolites. Biochemical Society Transactions, 2016, 44, 961-971.	3.4	76
44	Does Abiotic Stress Cause Functional B Vitamin Deficiency in Plants?. Plant Physiology, 2016, 172, 2082-2097.	4.8	65
45	A family of metal-dependent phosphatases implicated in metabolite damage-control. Nature Chemical Biology, 2016, 12, 621-627.	8.0	48
46	Bacterial and plant HAD enzymes catalyse a missing phosphatase step in thiamin diphosphate biosynthesis. Biochemical Journal, 2016, 473, 157-166.	3.7	22
47	Metabolite Damage and Metabolite Damage Control in Plants. Annual Review of Plant Biology, 2016, 67, 131-152.	18.7	43
48	Evidence that COG0325 proteins are involved in PLP homeostasis. Microbiology (United Kingdom), 2016, 162, 694-706.	1.8	47
49	Genomic and experimental evidence for multiple metabolic functions in the RidA/YjgF/YER057c/UK114 (Rid) protein family. BMC Genomics, 2015, 16, 382.	2.8	70
50	Proteins of unknown biochemical function - A persistent problem and a roadmap to help overcome it. Plant Physiology, 2015, 169, pp.00959.2015.	4.8	60
51	Functional Diversity of Haloacid Dehalogenase Superfamily Phosphatases from Saccharomyces cerevisiae. Journal of Biological Chemistry, 2015, 290, 18678-18698.	3.4	70
52	A directed-overflow and damage-control <i>N</i>-glycosidase in riboflavin biosynthesis. Biochemical Journal, 2015, 466, 137-145.	3.7	38
53	Remobilization of Phytol from Chlorophyll Degradation Is Essential for Tocopherol Synthesis and Growth of Arabidopsis. Plant Cell, 2015, 27, tpc.15.00395.	6.6	122
54	MINEs: open access databases of computationally predicted enzyme promiscuity products for untargeted metabolomics. Journal of Cheminformatics, 2015, 7, 44.	6.1	172

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55	Evidence that glutamine transaminase and omega-amidase potentially act in tandem to close the methionine salvage cycle in bacteria and plants. Phytochemistry, 2015, 113, 160-169.	2.9	27
56	Divisions of labor in the thiamin biosynthetic pathway among organs of maize. Frontiers in Plant Science, 2014, 5, 370.	3.6	21
57	Salvage of the thiamin pyrimidine moiety by plant TenA proteins lacking an active-site cysteine. Biochemical Journal, 2014, 463, 145-155.	3.7	22
58	<i>Arabidopsis</i> 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.	6.6	55
59	Plants Utilize a Highly Conserved System for Repair of NADH and NADPH Hydrates Â Â. Plant Physiology, 2014, 165, 52-61.	4.8	46
60	Plant-driven repurposing of the ancient <i>S</i>-adenosylmethionine repair enzyme homocysteine <i>S</i>-methyltransferase. Biochemical Journal, 2014, 463, 279-286.	3.7	13
61	High-throughput comparison, functional annotation, and metabolic modeling of plant genomes using the PlantSEED resource. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9645-9650.	7.1	69
62	Identification of the thiamin salvage enzyme thiazole kinase in Arabidopsis and maize. Phytochemistry, 2013, 94, 68-73.	2.9	24
63	Comparative genomics approaches to understanding and manipulating plant metabolism. Current Opinion in Biotechnology, 2013, 24, 278-284.	6.6	24
64	Metabolite damage and its repair or pre-emption. Nature Chemical Biology, 2013, 9, 72-80.	8.0	248
65	A cross-kingdom Nudix enzyme that pre-empts damage in thiamin metabolism. Biochemical Journal, 2013, 454, 533-542.	3.7	31
66	Identification of Mitochondrial Coenzyme A Transporters from Maize and Arabidopsis Â Â. Plant Physiology, 2013, 162, 581-588.	4.8	31
67	Mitochondrial and plastidial COG0354 proteins have folate-dependent functions in ironâ€“sulphur cluster metabolism. Journal of Experimental Botany, 2012, 63, 403-411.	4.8	30
68	Frontiers in metabolic reconstruction and modeling of plant genomes. Journal of Experimental Botany, 2012, 63, 2247-2258.	4.8	79
69	Identification and Characterization of the Missing Pyrimidine Reductase in the Plant Riboflavin Biosynthesis Pathway Â Â. Plant Physiology, 2012, 161, 48-56.	4.8	20
70	Plant B Vitamin Pathways and their Compartmentation: a Guide for the Perplexed. Journal of Experimental Botany, 2012, 63, 5379-5395.	4.8	78
71	Comparative genomics and functional analysis of the NiaP family uncover nicotinate transporters from bacteria, plants, and mammals. Functional and Integrative Genomics, 2012, 12, 25-34.	3.5	25
72	Identification of mitochondrial thiamin diphosphate carriers from Arabidopsis and maize. Functional and Integrative Genomics, 2012, 12, 317-326.	3.5	37

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73	Synergistic use of plant-prokaryote comparative genomics for functional annotations. BMC Genomics, 2011, 12, S2.	2.8	43
74	Folate Biosynthesis, Turnover, and Transport in Plants. Annual Review of Plant Biology, 2011, 62, 105-125.	18.7	228
75	A 5-formyltetrahydrofolate cycloligase paralog from all domains of life: comparative genomic and experimental evidence for a cryptic role in thiamin metabolism. Functional and Integrative Genomics, 2011, 11, 467-478.	3.5	21
76	Functional analysis of folate polyglutamylation and its essential role in plant metabolism and development. Plant Journal, 2010, 64, 267-279.	5.7	67
77	A central role for gamma-glutamyl hydrolases in plant folate homeostasis. Plant Journal, 2010, 64, 256-266.	5.7	48
78	Moonlighting Glutamate Formiminotransferases Can Functionally Replace 5-Formyltetrahydrofolate Cycloligase*. Journal of Biological Chemistry, 2010, 285, 41557-41566.	3.4	25
79	Identification of Transport-critical Residues in a Folate Transporter from the Folate-Biopterin Transporter (FBT) Family. Journal of Biological Chemistry, 2010, 285, 2867-2875.	3.4	22
80	A role for tetrahydrofolates in the metabolism of iron-sulfur clusters in all domains of life. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 10412-10417.	7.1	81
81	Nonflowering Plants Possess a Unique Folate-Dependent Phenylalanine Hydroxylase That Is Localized in Chloroplasts. Plant Cell, 2010, 22, 3410-3422.	6.6	37
82	â€˜Unknownâ€™ proteins and â€˜orphanâ€™ enzymes: the missing half of the engineering parts list â€“ and how to find it. Biochemical Journal, 2010, 425, 1-11.	3.7	183
83	A Novel Class of Modular Transporters for Vitamins in Prokaryotes. Journal of Bacteriology, 2009, 191, 42-51.	2.2	280
84	Characterization of the folate salvage enzyme p-aminobenzoylglutamate hydrolase in plants. Phytochemistry, 2008, 69, 29-37.	2.9	12
85	Folate biofortification in food plants. Trends in Plant Science, 2008, 13, 28-35.	8.8	112
86	Phylogenomic and Functional Analysis of Pterin-4a-Carbinolamine Dehydratase Family (COG2154) Proteins in Plants and Microorganisms Â Â. Plant Physiology, 2008, 146, 1515-1527.	4.8	33
87	Metabolism of the Folate Precursor p-Aminobenzoate in Plants. Journal of Biological Chemistry, 2008, 283, 15451-15459.	3.4	40
88	Tomato <i>Î³</i>-Glutamylhydrolases: Expression, Characterization, and Evidence for Heterodimer Formation Â. Plant Physiology, 2008, 148, 775-785.	4.8	19
89	Pterin and Folate Salvage. Plants and Escherichia coli Lack Capacity to Reduce Oxidized Pterins. Plant Physiology, 2007, 143, 1101-1109.	4.8	24
90	Finding novel metabolic genes through plant-prokaryote phylogenomics. Trends in Microbiology, 2007, 15, 563-570.	7.7	22

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91	Folate salvage in plants: pterin aldehyde reduction is mediated by multiple non-specific aldehyde reductases. Plant Journal, 2007, 51, 378-389.	5.7	24
92	Comparative genomics of bacterial and plant folate synthesis and salvage: predictions and validations. BMC Genomics, 2007, 8, 245.	2.8	133
93	5-Formyltetrahydrofolate Is an Inhibitory but Well Tolerated Metabolite in Arabidopsis Leaves. Journal of Biological Chemistry, 2005, 280, 26137-26142.	3.4	72
94	Plant Î³-Glutamyl Hydrolases and Folate Polyglutamates. Journal of Biological Chemistry, 2005, 280, 28877-28884.	3.4	89
95	Higher Plant Plastids and Cyanobacteria Have Folate Carriers Related to Those of Trypanosomatids. Journal of Biological Chemistry, 2005, 280, 38457-38463.	3.4	83
96	A Nudix Enzyme Removes Pyrophosphate from Dihydroneopterin Triphosphate in the Folate Synthesis Pathway of Bacteria and Plants. Journal of Biological Chemistry, 2005, 280, 5274-5280.	3.4	96
97	The Subsystems Approach to Genome Annotation and its Use in the Project to Annotate 1000 Genomes. Nucleic Acids Research, 2005, 33, 5691-5702.	14.5	1,806
98	Characterization and Metabolic Function of a Peroxisomal Sarcosine and Pipecolate Oxidase from Arabidopsis. Journal of Biological Chemistry, 2004, 279, 16947-16953.	3.4	69
99	Folate biofortification in tomatoes by engineering the pteridine branch of folate synthesis. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 13720-13725.	7.1	195
100	Folate synthesis in plants: the last step of the p-aminobenzoate branch is catalyzed by a plastidial aminodeoxychorismate lyase. Plant Journal, 2004, 40, 453-461.	5.7	86
101	The Folate Precursor p-Aminobenzoate Is Reversibly Converted to Its Glucose Ester in the Plant Cytosol. Journal of Biological Chemistry, 2003, 278, 20731-20737.	3.4	61
102	Cloning and Characterization of Mitochondrial 5-Formyltetrahydrofolate Cycloligase from Higher Plants. Journal of Biological Chemistry, 2002, 277, 42748-42754.	3.4	40
103	Plant Metabolic Engineeringâ€"Entering the S Curve. Metabolic Engineering, 2002, 4, 1-2.	7.0	15
104	ONE-CARBONMETABOLISM INHIGHERPLANTS. Annual Review of Plant Biology, 2001, 52, 119-137.	14.3	388
105	Isolation, Characterization, and Functional Expression of cDNAs Encoding NADH-dependent Methylenetetrahydrofolate Reductase from Higher Plants. Journal of Biological Chemistry, 1999, 274, 36089-36096.	3.4	66
106	Salinity Promotes Accumulation of 3-Dimethylsulfoniopropionate and Its Precursor S-Methylmethionine in Chloroplasts1. Plant Physiology, 1998, 116, 165-171.	4.8	56
107	Drought and salt tolerance: towards understanding and application. Trends in Biotechnology, 1990, 8, 358-362.	9.3	404
108	Evidence for a Ferredoxin-Dependent Choline Monooxygenase from Spinach Chloroplast Stroma. Plant Physiology, 1989, 90, 322-329.	4.8	132

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109	Oxygen-18 and Deuterium Labeling Studies of Choline Oxidation by Spinach and Sugar Beet. Plant Physiology, 1988, 88, 695-702.	4.8	30
110	Determination of glycine betaine by pyrolysis-gas chromatography in cereals and grasses. Phytochemistry, 1980, 19, 2371-2374.	2.9	75