Andrew D Hanson

List of Publications by Year
in descending order

110 papers	7,844 citations	81434 41 h-index	62345 84 g-index
116 all docs	116 docs citations	116 times ranked	10778 citing authors

#	Article	IF	Citations
1	The Subsystems Approach to Genome Annotation and its Use in the Project to Annotate 1000 Genomes. Nucleic Acids Research, 2005, 33, 5691-5702.	6.5	1,806
2	Drought and salt tolerance: towards understanding and application. Trends in Biotechnology, 1990, 8, 358-362.	4.9	404
3	ONE-CARBONMETABOLISM INHIGHERPLANTS. Annual Review of Plant Biology, 2001, 52, 119-137.	14.2	388
4	A Novel Class of Modular Transporters for Vitamins in Prokaryotes. Journal of Bacteriology, 2009, 191, 42-51.	1.0	280
5	Metabolite damage and its repair or pre-emption. Nature Chemical Biology, 2013, 9, 72-80.	3.9	248
6	Folate Biosynthesis, Turnover, and Transport in Plants. Annual Review of Plant Biology, 2011, 62, 105-125.	8.6	228
7	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.	3.3	195
8	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.	1.7	183
9	MINEs: open access databases of computationally predicted enzyme promiscuity products for untargeted metabolomics. Journal of Cheminformatics, 2015, 7, 44.	2.8	172
10	Comparative genomics of bacterial and plant folate synthesis and salvage: predictions and validations. BMC Genomics, 2007, 8, 245.	1.2	133
11	Evidence for a Ferredoxin-Dependent Choline Monooxygenase from Spinach Chloroplast Stroma. Plant Physiology, 1989, 90, 322-329.	2.3	132
12	Remobilization of Phytol from Chlorophyll Degradation Is Essential for Tocopherol Synthesis and Growth of Arabidopsis. Plant Cell, 2015, 27, tpc.15.00395.	3.1	122
13	Folate biofortification in food plants. Trends in Plant Science, 2008, 13, 28-35.	4.3	112
14	Revolutionizing agriculture with synthetic biology. Nature Plants, 2019, 5, 1207-1210.	4.7	100
15	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.	1.6	96
16	Plant Î³-Glutamyl Hydrolases and Folate Polyglutamates. Journal of Biological Chemistry, 2005, 280, 28877-28884.	1.6	89
17	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.	2.8	86
18	Engineering Strategies to Boost Crop Productivity by Cutting Respiratory Carbon Loss. Plant Cell, 2019, 31, 297-314.	3.1	86

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19	Higher Plant Plastids and Cyanobacteria Have Folate Carriers Related to Those of Trypanosomatids. Journal of Biological Chemistry, 2005, 280, 38457-38463.	1.6	83
20	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.	3.3	81
21	Frontiers in metabolic reconstruction and modeling of plant genomes. Journal of Experimental Botany, 2012, 63, 2247-2258.	2.4	79
22	Plant B Vitamin Pathways and their Compartmentation: a Guide for the Perplexed. Journal of Experimental Botany, 2012, 63, 5379-5395.	2.4	78
23	â€˜Nothing of chemistry disappears in biologyâ€™: the Top 30 damage-prone endogenous metabolites. Biochemical Society Transactions, 2016, 44, 961-971.	1.6	76
24	Determination of glycine betaine by pyrolysis-gas chromatography in cereals and grasses. Phytochemistry, 1980, 19, 2371-2374.	1.4	75
25	5-Formyltetrahydrofolate Is an Inhibitory but Well Tolerated Metabolite in Arabidopsis Leaves. Journal of Biological Chemistry, 2005, 280, 26137-26142.	1.6	72
26	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
27	Functional Diversity of Haloacid Dehalogenase Superfamily Phosphatases from Saccharomyces cerevisiae. Journal of Biological Chemistry, 2015, 290, 18678-18698.	1.6	70
28	Characterization and Metabolic Function of a Peroxisomal Sarcosine and Pipecolate Oxidase from Arabidopsis. Journal of Biological Chemistry, 2004, 279, 16947-16953.	1.6	69
29	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.	3.3	69
30	Functional analysis of folate polyglutamylation and its essential role in plant metabolism and development. Plant Journal, 2010, 64, 267-279.	2.8	67
31	Isolation, Characterization, and Functional Expression of cDNAs Encoding NADH-dependent Methylenetetrahydrofolate Reductase from Higher Plants. Journal of Biological Chemistry, 1999, 274, 36089-36096.	1.6	66
32	Does Abiotic Stress Cause Functional B Vitamin Deficiency in Plants?. Plant Physiology, 2016, 172, 2082-2097.	2.3	65
33	The Folate Precursor p-Aminobenzoate Is Reversibly Converted to Its Glucose Ester in the Plant Cytosol. Journal of Biological Chemistry, 2003, 278, 20731-20737.	1.6	61
34	Proteins of unknown biochemical function - A persistent problem and a roadmap to help overcome it. Plant Physiology, 2015, 169, pp.00959.2015.	2.3	60
35	Non-enzymatic molecular damage as a prototypic driver of aging. Journal of Biological Chemistry, 2017, 292, 6029-6038.	1.6	57
36	Salinity Promotes Accumulation of 3-Dimethylsulfoniopropionate and Its Precursor S-Methylmethionine in Chloroplasts1. Plant Physiology, 1998, 116, 165-171.	2.3	56

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37	<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.	3.1	55
38	A central role for gamma-glutamyl hydrolases in plant folate homeostasis. Plant Journal, 2010, 64, 256-266.	2.8	48
39	A family of metal-dependent phosphatases implicated in metabolite damage-control. Nature Chemical Biology, 2016, 12, 621-627.	3.9	48
40	Evidence that COG0325 proteins are involved in PLP homeostasis. Microbiology (United Kingdom), 2016, 162, 694-706.	0.7	47
41	Plants Utilize a Highly Conserved System for Repair of NADH and NADPH Hydrates Â Â. Plant Physiology, 2014, 165, 52-61.	2.3	46
42	Redesigning thiamin synthesis: Prospects and potential payoffs. Plant Science, 2018, 273, 92-99.	1.7	44
43	Synergistic use of plant-prokaryote comparative genomics for functional annotations. BMC Genomics, 2011, 12, S2.	1.2	43
44	Metabolite Damage and Metabolite Damage Control in Plants. Annual Review of Plant Biology, 2016, 67, 131-152.	8.6	43
45	Metabolite damage and repair in metabolic engineering design. Metabolic Engineering, 2017, 44, 150-159.	3.6	43
46	Arabidopsis <i>TH2</i> Encodes the Orphan Enzyme Thiamin Monophosphate Phosphatase. Plant Cell, 2016, 28, 2683-2696.	3.1	42
47	Discovery of a widespread prokaryotic 5-oxoprolinase that was hiding in plain sight. Journal of Biological Chemistry, 2017, 292, 16360-16367.	1.6	41
48	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, .	3.3	41
49	Cloning and Characterization of Mitochondrial 5-Formyltetrahydrofolate Cycloligase from Higher Plants. Journal of Biological Chemistry, 2002, 277, 42748-42754.	1.6	40
50	Metabolism of the Folate Precursor p-Aminobenzoate in Plants. Journal of Biological Chemistry, 2008, 283, 15451-15459.	1.6	40
51	In vivo hypermutation and continuous evolution. Nature Reviews Methods Primers, 2022, 2, .	11.8	39
52	A directed-overflow and damage-control <i>N</i>-glycosidase in riboflavin biosynthesis. Biochemical Journal, 2015, 466, 137-145.	1.7	38
53	Nonflowering Plants Possess a Unique Folate-Dependent Phenylalanine Hydroxylase That Is Localized in Chloroplasts. Plant Cell, 2010, 22, 3410-3422.	3.1	37
54	Identification of mitochondrial thiamin diphosphate carriers from Arabidopsis and maize. Functional and Integrative Genomics, 2012, 12, 317-326.	1.4	37

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55	Phylogenomic and Functional Analysis of Pterin-4a-Carbinolamine Dehydratase Family (COG2154) Proteins in Plants and Microorganisms Â Â. Plant Physiology, 2008, 146, 1515-1527.	2.3	33
56	A cross-kingdom Nudix enzyme that pre-empts damage in thiamin metabolism. Biochemical Journal, 2013, 454, 533-542.	1.7	31
57	Identification of Mitochondrial Coenzyme A Transporters from Maize and Arabidopsis Â Â. Plant Physiology, 2013, 162, 581-588.	2.3	31
58	Oxygen-18 and Deuterium Labeling Studies of Choline Oxidation by Spinach and Sugar Beet. Plant Physiology, 1988, 88, 695-702.	2.3	30
59	Mitochondrial and plastidial COG0354 proteins have folate-dependent functions in ironâ€"sulphur cluster metabolism. Journal of Experimental Botany, 2012, 63, 403-411.	2.4	30
60	Newly-discovered enzymes that function in metabolite damage-control. Current Opinion in Chemical Biology, 2018, 47, 101-108.	2.8	30
61	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.	1.4	27
62	A Tale of Two Concepts: Harmonizing the Free Radical and Antagonistic Pleiotropy Theories of Aging. Antioxidants and Redox Signaling, 2018, 29, 1003-1017.	2.5	27
63	Moonlighting Glutamate Formiminotransferases Can Functionally Replace 5-Formyltetrahydrofolate Cycloligase*. Journal of Biological Chemistry, 2010, 285, 41557-41566.	1.6	25
64	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.	1.4	25
65	Pterin and Folate Salvage. Plants and Escherichia coli Lack Capacity to Reduce Oxidized Pterins. Plant Physiology, 2007, 143, 1101-1109.	2.3	24
66	Folate salvage in plants: pterin aldehyde reduction is mediated by multiple non-specific aldehyde reductases. Plant Journal, 2007, 51, 378-389.	2.8	24
67	Identification of the thiamin salvage enzyme thiazole kinase in Arabidopsis and maize. Phytochemistry, 2013, 94, 68-73.	1.4	24
68	Comparative genomics approaches to understanding and manipulating plant metabolism. Current Opinion in Biotechnology, 2013, 24, 278-284.	3.3	24
69	Parts-Prospecting for a High-Efficiency Thiamin Thiazole Biosynthesis Pathway. Plant Physiology, 2019, 179, 958-968.	2.3	24
70	Bioinformatic and experimental evidence for suicidal and catalytic plant THI4s. Biochemical Journal, 2020, 477, 2055-2069.	1.7	24
71	Finding novel metabolic genes through plant-prokaryote phylogenomics. Trends in Microbiology, 2007, 15, 563-570.	3.5	22
72	Identification of Transport-critical Residues in a Folate Transporter from the Folate-Biopterin Transporter (FBT) Family. Journal of Biological Chemistry, 2010, 285, 2867-2875.	1.6	22

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73	Salvage of the thiamin pyrimidine moiety by plant TenA proteins lacking an active-site cysteine. Biochemical Journal, 2014, 463, 145-155.	1.7	22
74	Bacterial and plant HAD enzymes catalyse a missing phosphatase step in thiamin diphosphate biosynthesis. Biochemical Journal, 2016, 473, 157-166.	1.7	22
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.	1.4	21
76	Divisions of labor in the thiamin biosynthetic pathway among organs of maize. Frontiers in Plant Science, 2014, 5, 370.	1.7	21
77	Identification and Characterization of the Missing Pyrimidine Reductase in the Plant Riboflavin Biosynthesis Pathway Â Â. Plant Physiology, 2012, 161, 48-56.	2.3	20
78	Carboxythiazole is a key microbial nutrient currency and critical component of thiamin biosynthesis. Scientific Reports, 2018, 8, 5940.	1.6	20
79	Evidence that the metabolite repair enzyme NAD(P)HX epimerase has a moonlighting function. Bioscience Reports, 2018, 38, .	1.1	20
80	Potential for Applying Continuous Directed Evolution to Plant Enzymes: An Exploratory Study. Life, 2020, 10, 179.	1.1	20
81	Enzymes as Parts in Need of Replacement â€“ and How to Extend Their Working Life. Trends in Plant Science, 2020, 25, 661-669.	4.3	20
82	Tomato <i>Î³</i>-Glutamylhydrolases: Expression, Characterization, and Evidence for Heterodimer Formation Â. Plant Physiology, 2008, 148, 775-785.	2.3	19
83	Identification of a metabolic disposal route for the oncometabolite S-(2-succino)cysteine in Bacillus subtilis. Journal of Biological Chemistry, 2018, 293, 8255-8263.	1.6	18
84	Using continuous directed evolution to improve enzymes for plant applications. Plant Physiology, 2022, 188, 971-983.	2.3	18
85	A Core Metabolome Response of Maize Leaves Subjected to Long-Duration Abiotic Stresses. Metabolites, 2021, 11, 797.	1.3	17
86	Rethinking the PDH Bypass and GABA Shunt as Thiamin-Deficiency Workarounds. Plant Physiology, 2019, 181, 389-393.	2.3	16
87	Plant Metabolic Engineeringâ€"Entering the S Curve. Metabolic Engineering, 2002, 4, 1-2.	3.6	15
88	Salvage of the 5-deoxyribose byproduct of radical SAM enzymes. Nature Communications, 2018, 9, 3105.	5.8	15
89	Plant-driven repurposing of the ancient <i>S</i>-adenosylmethionine repair enzyme homocysteine <i>S</i>-methyltransferase. Biochemical Journal, 2014, 463, 279-286.	1.7	13
90	Systematic identification and analysis of frequent gene fusion events in metabolic pathways. BMC Genomics, 2016, 17, 473.	1.2	13

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91	A plastidial pantoate transporter with a potential role in pantothenate synthesis. Biochemical Journal, 2018, 475, 813-825.	1.7	13
92	The PLUTO plastidial nucleobase transporter also transports the thiamin precursor hydroxymethylpyrimidine. Bioscience Reports, 2018, 38, .	1.1	13
93	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.	1.7	13
94	Characterization of the folate salvage enzyme p-aminobenzoylglutamate hydrolase in plants. Phytochemistry, 2008, 69, 29-37.	1.4	12
95	Synthetic biology meets plant metabolism. Plant Science, 2018, 273, 1-2.	1.7	10
96	Thioproline formation as a driver of formaldehyde toxicity in <i>Escherichia coli</i>. Biochemical Journal, 2020, 477, 1745-1757.	1.7	10
97	Metabolite Damage and Damage Control in a Minimal Genome. MBio, 2022, 13, .	1.8	10
98	Plant metabolic engineering in the synthetic biology era: plant chassis selection. Plant Cell Reports, 2018, 37, 1357-1358.	2.8	9
99	Construction and applications of a B vitamin genetic resource for investigation of vitaminâ€dependent metabolism in maize. Plant Journal, 2020, 101, 442-454.	2.8	9
100	A Guardian Angel Phosphatase for Mainline Carbon Metabolism. Trends in Biochemical Sciences, 2016, 41, 893-894.	3.7	7
101	Experimental and Metabolic Modeling Evidence for a Folate-Cleaving Side-Activity of Ketopantoate Hydroxymethyltransferase (PanB). Frontiers in Microbiology, 2016, 7, 431.	1.5	6
102	A strictly monofunctional bacterial hydroxymethylpyrimidine phosphate kinase precludes damaging errors in thiamin biosynthesis. Biochemical Journal, 2017, 474, 2887-2895.	1.7	6
103	Structure and function of aerotolerant, multiple-turnover THI4 thiazole synthases. Biochemical Journal, 2021, 478, 3265-3279.	1.7	6
104	The Moderately (D)efficient Enzyme: Catalysis-Related Damage <i>In Vivo</i> and Its Repair. Biochemistry, 2021, 60, 3555-3565.	1.2	5
105	Chemical-damage MINE: A database of curated and predicted spontaneous metabolic reactions. Metabolic Engineering, 2022, 69, 302-312.	3.6	5
106	Focus Issue Editorial: Synthetic Biology. Plant Physiology, 2019, 179, 772-774.	2.3	4
107	An unusual diphosphatase from the PhnP family cleaves reactive FAD photoproducts. Biochemical Journal, 2018, 475, 261-272.	1.7	3
108	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.	1.7	3

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109	Comparative Genomics â˜†. , 2018, , .		2
110	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.	1.3	2