

# Andrew D Hanson

## List of Publications by Year in descending order

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110  
papers

7,844  
citations

71102

41  
h-index

53230

85  
g-index

116  
all docs

116  
docs citations

116  
times ranked

9623  
citing authors

#	ARTICLE	IF	CITATIONS
1	The Subsystems Approach to Genome Annotation and its Use in the Project to Annotate 1000 Genomes. <i>Nucleic Acids Research</i> , 2005, 33, 5691-5702.	14.5	1,806
2	Drought and salt tolerance: towards understanding and application. <i>Trends in Biotechnology</i> , 1990, 8, 358-362.	9.3	404
3	ONE-CARBON METABOLISM IN HIGHER PLANTS. <i>Annual Review of Plant Biology</i> , 2001, 52, 119-137.	14.3	388
4	A Novel Class of Modular Transporters for Vitamins in Prokaryotes. <i>Journal of Bacteriology</i> , 2009, 191, 42-51.	2.2	280
5	Metabolite damage and its repair or pre-emption. <i>Nature Chemical Biology</i> , 2013, 9, 72-80.	8.0	248
6	Folate Biosynthesis, Turnover, and Transport in Plants. <i>Annual Review of Plant Biology</i> , 2011, 62, 105-125.	18.7	228
7	Folate biofortification in tomatoes by engineering the pteridine branch of folate synthesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 13720-13725.	7.1	195
8	“Unknown” proteins and “orphan” enzymes: the missing half of the engineering parts list “ and how to find it. <i>Biochemical Journal</i> , 2010, 425, 1-11.	3.7	183
9	MINEs: open access databases of computationally predicted enzyme promiscuity products for untargeted metabolomics. <i>Journal of Cheminformatics</i> , 2015, 7, 44.	6.1	172
10	Comparative genomics of bacterial and plant folate synthesis and salvage: predictions and validations. <i>BMC Genomics</i> , 2007, 8, 245.	2.8	133
11	Evidence for a Ferredoxin-Dependent Choline Monooxygenase from Spinach Chloroplast Stroma. <i>Plant Physiology</i> , 1989, 90, 322-329.	4.8	132
12	Remobilization of Phytol from Chlorophyll Degradation Is Essential for Tocopherol Synthesis and Growth of Arabidopsis. <i>Plant Cell</i> , 2015, 27, tpc.15.00395.	6.6	122
13	Folate biofortification in food plants. <i>Trends in Plant Science</i> , 2008, 13, 28-35.	8.8	112
14	Revolutionizing agriculture with synthetic biology. <i>Nature Plants</i> , 2019, 5, 1207-1210.	9.3	100
15	A Nudix Enzyme Removes Pyrophosphate from Dihydroneopterin Triphosphate in the Folate Synthesis Pathway of Bacteria and Plants. <i>Journal of Biological Chemistry</i> , 2005, 280, 5274-5280.	3.4	96
16	Plant $\beta$ -Glutamyl Hydrolases and Folate Polyglutamates. <i>Journal of Biological Chemistry</i> , 2005, 280, 28877-28884.	3.4	89
17	Folate synthesis in plants: the last step of the p-aminobenzoate branch is catalyzed by a plastidial aminodeoxychorismate lyase. <i>Plant Journal</i> , 2004, 40, 453-461.	5.7	86
18	Engineering Strategies to Boost Crop Productivity by Cutting Respiratory Carbon Loss. <i>Plant Cell</i> , 2019, 31, 297-314.	6.6	86

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19	Higher Plant Plastids and Cyanobacteria Have Folate Carriers Related to Those of Trypanosomatids. <i>Journal of Biological Chemistry</i> , 2005, 280, 38457-38463.	3.4	83
20	A role for tetrahydrofolates in the metabolism of iron-sulfur clusters in all domains of life. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 10412-10417.	7.1	81
21	Frontiers in metabolic reconstruction and modeling of plant genomes. <i>Journal of Experimental Botany</i> , 2012, 63, 2247-2258.	4.8	79
22	Plant B Vitamin Pathways and their Compartmentation: a Guide for the Perplexed. <i>Journal of Experimental Botany</i> , 2012, 63, 5379-5395.	4.8	78
23	â€œNothing of chemistry disappears in biologyâ€™: the Top 30 damage-prone endogenous metabolites. <i>Biochemical Society Transactions</i> , 2016, 44, 961-971.	3.4	76
24	Determination of glycine betaine by pyrolysis-gas chromatography in cereals and grasses. <i>Phytochemistry</i> , 1980, 19, 2371-2374.	2.9	75
25	5-Formyltetrahydrofolate Is an Inhibitory but Well Tolerated Metabolite in Arabidopsis Leaves. <i>Journal of Biological Chemistry</i> , 2005, 280, 26137-26142.	3.4	72
26	Genomic and experimental evidence for multiple metabolic functions in the RidA/YjgF/YER057c/UK114 (Rid) protein family. <i>BMC Genomics</i> , 2015, 16, 382.	2.8	70
27	Functional Diversity of Haloacid Dehalogenase Superfamily Phosphatases from <i>Saccharomyces cerevisiae</i> . <i>Journal of Biological Chemistry</i> , 2015, 290, 18678-18698.	3.4	70
28	Characterization and Metabolic Function of a Peroxisomal Sarcosine and Pipecolate Oxidase from Arabidopsis. <i>Journal of Biological Chemistry</i> , 2004, 279, 16947-16953.	3.4	69
29	High-throughput comparison, functional annotation, and metabolic modeling of plant genomes using the PlantSEED resource. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 9645-9650.	7.1	69
30	Functional analysis of folate polyglutamylation and its essential role in plant metabolism and development. <i>Plant Journal</i> , 2010, 64, 267-279.	5.7	67
31	Isolation, Characterization, and Functional Expression of cDNAs Encoding NADH-dependent Methylenetetrahydrofolate Reductase from Higher Plants. <i>Journal of Biological Chemistry</i> , 1999, 274, 36089-36096.	3.4	66
32	Does Abiotic Stress Cause Functional B Vitamin Deficiency in Plants?. <i>Plant Physiology</i> , 2016, 172, 2082-2097.	4.8	65
33	The Folate Precursor p-Aminobenzoate Is Reversibly Converted to Its Glucose Ester in the Plant Cytosol. <i>Journal of Biological Chemistry</i> , 2003, 278, 20731-20737.	3.4	61
34	Proteins of unknown biochemical function - A persistent problem and a roadmap to help overcome it. <i>Plant Physiology</i> , 2015, 169, pp.00959.2015.	4.8	60
35	Non-enzymatic molecular damage as a prototypic driver of aging. <i>Journal of Biological Chemistry</i> , 2017, 292, 6029-6038.	3.4	57
36	Salinity Promotes Accumulation of 3-Dimethylsulfoniopropionate and Its Precursor S-Methylmethionine in Chloroplasts1. <i>Plant Physiology</i> , 1998, 116, 165-171.	4.8	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. <i>Plant Cell</i> , 2014, 26, 3010-3022.	6.6	55
38	A central role for gamma-glutamyl hydrolases in plant folate homeostasis. <i>Plant Journal</i> , 2010, 64, 256-266.	5.7	48
39	A family of metal-dependent phosphatases implicated in metabolite damage-control. <i>Nature Chemical Biology</i> , 2016, 12, 621-627.	8.0	48
40	Evidence that COG0325 proteins are involved in PLP homeostasis. <i>Microbiology (United Kingdom)</i> , 2016, 162, 694-706.	1.8	47
41	Plants Utilize a Highly Conserved System for Repair of NADH and NADPH Hydrates. <i>Plant Physiology</i> , 2014, 165, 52-61.	4.8	46
42	Redesigning thiamin synthesis: Prospects and potential payoffs. <i>Plant Science</i> , 2018, 273, 92-99.	3.6	44
43	Synergistic use of plant-prokaryote comparative genomics for functional annotations. <i>BMC Genomics</i> , 2011, 12, S2.	2.8	43
44	Metabolite Damage and Metabolite Damage Control in Plants. <i>Annual Review of Plant Biology</i> , 2016, 67, 131-152.	18.7	43
45	Metabolite damage and repair in metabolic engineering design. <i>Metabolic Engineering</i> , 2017, 44, 150-159.	7.0	43
46	<i>Arabidopsis</i> TH2 Encodes the Orphan Enzyme Thiamin Monophosphate Phosphatase. <i>Plant Cell</i> , 2016, 28, 2683-2696.	6.6	42
47	Discovery of a widespread prokaryotic 5-oxoprolinase that was hiding in plain sight. <i>Journal of Biological Chemistry</i> , 2017, 292, 16360-16367.	3.4	41
48	The number of catalytic cycles in an enzyme's lifetime and why it matters to metabolic engineering. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	41
49	Cloning and Characterization of Mitochondrial 5-Formyltetrahydrofolate Cycloligase from Higher Plants. <i>Journal of Biological Chemistry</i> , 2002, 277, 42748-42754.	3.4	40
50	Metabolism of the Folate Precursor p-Aminobenzoate in Plants. <i>Journal of Biological Chemistry</i> , 2008, 283, 15451-15459.	3.4	40
51	In vivo hypermutation and continuous evolution. <i>Nature Reviews Methods Primers</i> , 2022, 2, .	21.2	39
52	A directed-overflow and damage-control N-glycosidase in riboflavin biosynthesis. <i>Biochemical Journal</i> , 2015, 466, 137-145.	3.7	38
53	Nonflowering Plants Possess a Unique Folate-Dependent Phenylalanine Hydroxylase That Is Localized in Chloroplasts. <i>Plant Cell</i> , 2010, 22, 3410-3422.	6.6	37
54	Identification of mitochondrial thiamin diphosphate carriers from <i>Arabidopsis</i> and maize. <i>Functional and Integrative Genomics</i> , 2012, 12, 317-326.	3.5	37

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55	Phylogenomic and Functional Analysis of Pterin-4a-Carbinolamine Dehydratase Family (COG2154) Proteins in Plants and Microorganisms. <i>Plant Physiology</i> , 2008, 146, 1515-1527.	4.8	33
56	A cross-kingdom Nudix enzyme that pre-empted damage in thiamin metabolism. <i>Biochemical Journal</i> , 2013, 454, 533-542.	3.7	31
57	Identification of Mitochondrial Coenzyme A Transporters from Maize and Arabidopsis. <i>Plant Physiology</i> , 2013, 162, 581-588.	4.8	31
58	Oxygen-18 and Deuterium Labeling Studies of Choline Oxidation by Spinach and Sugar Beet. <i>Plant Physiology</i> , 1988, 88, 695-702.	4.8	30
59	Mitochondrial and plastidial COG0354 proteins have folate-dependent functions in iron-sulphur cluster metabolism. <i>Journal of Experimental Botany</i> , 2012, 63, 403-411.	4.8	30
60	Newly-discovered enzymes that function in metabolite damage-control. <i>Current Opinion in Chemical Biology</i> , 2018, 47, 101-108.	6.1	30
61	Evidence that glutamine transaminase and omega-amidase potentially act in tandem to close the methionine salvage cycle in bacteria and plants. <i>Phytochemistry</i> , 2015, 113, 160-169.	2.9	27
62	A Tale of Two Concepts: Harmonizing the Free Radical and Antagonistic Pleiotropy Theories of Aging. <i>Antioxidants and Redox Signaling</i> , 2018, 29, 1003-1017.	5.4	27
63	Moonlighting Glutamate Formiminotransferases Can Functionally Replace 5-Formyltetrahydrofolate Cycloligase*. <i>Journal of Biological Chemistry</i> , 2010, 285, 41557-41566.	3.4	25
64	Comparative genomics and functional analysis of the NiaP family uncover nicotinate transporters from bacteria, plants, and mammals. <i>Functional and Integrative Genomics</i> , 2012, 12, 25-34.	3.5	25
65	Pterin and Folate Salvage. Plants and Escherichia coli Lack Capacity to Reduce Oxidized Pterins. <i>Plant Physiology</i> , 2007, 143, 1101-1109.	4.8	24
66	Folate salvage in plants: pterin aldehyde reduction is mediated by multiple non-specific aldehyde reductases. <i>Plant Journal</i> , 2007, 51, 378-389.	5.7	24
67	Identification of the thiamin salvage enzyme thiazole kinase in Arabidopsis and maize. <i>Phytochemistry</i> , 2013, 94, 68-73.	2.9	24
68	Comparative genomics approaches to understanding and manipulating plant metabolism. <i>Current Opinion in Biotechnology</i> , 2013, 24, 278-284.	6.6	24
69	Parts-Prospecting for a High-Efficiency Thiamin Thiazole Biosynthesis Pathway. <i>Plant Physiology</i> , 2019, 179, 958-968.	4.8	24
70	Bioinformatic and experimental evidence for suicidal and catalytic plant THI4s. <i>Biochemical Journal</i> , 2020, 477, 2055-2069.	3.7	24
71	Finding novel metabolic genes through plant-prokaryote phylogenomics. <i>Trends in Microbiology</i> , 2007, 15, 563-570.	7.7	22
72	Identification of Transport-critical Residues in a Folate Transporter from the Folate-Biopterin Transporter (FBT) Family. <i>Journal of Biological Chemistry</i> , 2010, 285, 2867-2875.	3.4	22

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73	Salvage of the thiamin pyrimidine moiety by plant TenA proteins lacking an active-site cysteine. <i>Biochemical Journal</i> , 2014, 463, 145-155.	3.7	22
74	Bacterial and plant HAD enzymes catalyse a missing phosphatase step in thiamin diphosphate biosynthesis. <i>Biochemical Journal</i> , 2016, 473, 157-166.	3.7	22
75	A 5-formyltetrahydrofolate cycloligase paralog from all domains of life: comparative genomic and experimental evidence for a cryptic role in thiamin metabolism. <i>Functional and Integrative Genomics</i> , 2011, 11, 467-478.	3.5	21
76	Divisions of labor in the thiamin biosynthetic pathway among organs of maize. <i>Frontiers in Plant Science</i> , 2014, 5, 370.	3.6	21
77	Identification and Characterization of the Missing Pyrimidine Reductase in the Plant Riboflavin Biosynthesis Pathway. <i>Plant Physiology</i> , 2012, 161, 48-56.	4.8	20
78	Carboxythiazole is a key microbial nutrient currency and critical component of thiamin biosynthesis. <i>Scientific Reports</i> , 2018, 8, 5940.	3.3	20
79	Evidence that the metabolite repair enzyme NAD(P)HX epimerase has a moonlighting function. <i>Bioscience Reports</i> , 2018, 38, .	2.4	20
80	Potential for Applying Continuous Directed Evolution to Plant Enzymes: An Exploratory Study. <i>Life</i> , 2020, 10, 179.	2.4	20
81	Enzymes as Parts in Need of Replacement and How to Extend Their Working Life. <i>Trends in Plant Science</i> , 2020, 25, 661-669.	8.8	20
82	Tomato $\gamma$ -Glutamylhydrolases: Expression, Characterization, and Evidence for Heterodimer Formation. <i>Plant Physiology</i> , 2008, 148, 775-785.	4.8	19
83	Identification of a metabolic disposal route for the oncometabolite S-(2-succino)cysteine in <i>Bacillus subtilis</i> . <i>Journal of Biological Chemistry</i> , 2018, 293, 8255-8263.	3.4	18
84	Using continuous directed evolution to improve enzymes for plant applications. <i>Plant Physiology</i> , 2022, 188, 971-983.	4.8	18
85	A Core Metabolome Response of Maize Leaves Subjected to Long-Duration Abiotic Stresses. <i>Metabolites</i> , 2021, 11, 797.	2.9	17
86	Rethinking the PDH Bypass and GABA Shunt as Thiamin-Deficiency Workarounds. <i>Plant Physiology</i> , 2019, 181, 389-393.	4.8	16
87	Plant Metabolic Engineering: Entering the S Curve. <i>Metabolic Engineering</i> , 2002, 4, 1-2.	7.0	15
88	Salvage of the 5-deoxyribose byproduct of radical SAM enzymes. <i>Nature Communications</i> , 2018, 9, 3105.	12.8	15
89	Plant-driven repurposing of the ancient S-adenosylmethionine repair enzyme homocysteine S-methyltransferase. <i>Biochemical Journal</i> , 2014, 463, 279-286.	3.7	13
90	Systematic identification and analysis of frequent gene fusion events in metabolic pathways. <i>BMC Genomics</i> , 2016, 17, 473.	2.8	13

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91	A plastidial pantoate transporter with a potential role in pantothenate synthesis. <i>Biochemical Journal</i> , 2018, 475, 813-825.	3.7	13
92	The PLUTO plastidial nucleobase transporter also transports the thiamin precursor hydroxymethylpyrimidine. <i>Bioscience Reports</i> , 2018, 38, .	2.4	13
93	The metabolite repair enzyme Nit1 is a dual-targeted amidase that disposes of damaged glutathione in <i>Arabidopsis</i> . <i>Biochemical Journal</i> , 2019, 476, 683-697.	3.7	13
94	Characterization of the folate salvage enzyme p-aminobenzoylglutamate hydrolase in plants. <i>Phytochemistry</i> , 2008, 69, 29-37.	2.9	12
95	Synthetic biology meets plant metabolism. <i>Plant Science</i> , 2018, 273, 1-2.	3.6	10
96	Thioprolinone formation as a driver of formaldehyde toxicity in <i>Escherichia coli</i> . <i>Biochemical Journal</i> , 2020, 477, 1745-1757.	3.7	10
97	Metabolite Damage and Damage Control in a Minimal Genome. <i>MBio</i> , 2022, 13, .	4.1	10
98	Plant metabolic engineering in the synthetic biology era: plant chassis selection. <i>Plant Cell Reports</i> , 2018, 37, 1357-1358.	5.6	9
99	Construction and applications of a B vitamin genetic resource for investigation of vitamin-dependent metabolism in maize. <i>Plant Journal</i> , 2020, 101, 442-454.	5.7	9
100	A Guardian Angel Phosphatase for Mainline Carbon Metabolism. <i>Trends in Biochemical Sciences</i> , 2016, 41, 893-894.	7.5	7
101	Experimental and Metabolic Modeling Evidence for a Folate-Cleaving Side-Activity of Ketopantoate Hydroxymethyltransferase (PanB). <i>Frontiers in Microbiology</i> , 2016, 7, 431.	3.5	6
102	A strictly monofunctional bacterial hydroxymethylpyrimidine phosphate kinase precludes damaging errors in thiamin biosynthesis. <i>Biochemical Journal</i> , 2017, 474, 2887-2895.	3.7	6
103	Structure and function of aerotolerant, multiple-turnover THI4 thiazole synthases. <i>Biochemical Journal</i> , 2021, 478, 3265-3279.	3.7	6
104	The Moderately (D)efficient Enzyme: Catalysis-Related Damage <i>In Vivo</i> and Its Repair. <i>Biochemistry</i> , 2021, 60, 3555-3565.	2.5	5
105	Chemical-damage MINE: A database of curated and predicted spontaneous metabolic reactions. <i>Metabolic Engineering</i> , 2022, 69, 302-312.	7.0	5
106	Focus Issue Editorial: Synthetic Biology. <i>Plant Physiology</i> , 2019, 179, 772-774.	4.8	4
107	An unusual diphosphatase from the PhnP family cleaves reactive FAD photoproducts. <i>Biochemical Journal</i> , 2018, 475, 261-272.	3.7	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. <i>Frontiers in Plant Science</i> , 2021, 12, 721391.	3.6	3

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109	Comparative Genomics <i>et al.</i> , 2018, , .		2
110	An Enzyme Containing the Conserved Domain of Unknown Function DUF62 Acts as a Stereoselective ( <i>R</i> - <i>S</i> )-Adenosylmethionine Hydrolase. <i>ChemBioChem</i> , 2020, 21, 3495-3499.	2.6	2