Alison M Smith

List of Publications by Year
in descending order

111 papers	15,143 citations	13068 68 h-index	22764 112 g-index
114 all docs	114 docs citations	114 times ranked	9956 citing authors

#	Article	IF	Citations
1	Starch: Its Metabolism, Evolution, and Biotechnological Modification in Plants. Annual Review of Plant Biology, 2010, 61, 209-234.	8.6	839
2	Coordination of carbon supply and plant growth. Plant, Cell and Environment, 2007, 30, 1126-1149.	2.8	838
3	Circadian control of carbohydrate availability for growth in<i>Arabidopsis</i>plants at night. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 9458-9463.	3.3	576
4	STARCH DEGRADATION. Annual Review of Plant Biology, 2005, 56, 73-98.	8.6	470
5	The wrinkled-seed character of pea described by Mendel is caused by a transposon-like insertion in a gene encoding starch-branching enzyme. Cell, 1990, 60, 115-122.	13.5	442
6	A Previously Unknown Maltose Transporter Essential for Starch Degradation in Leaves. Science, 2004, 303, 87-89.	6.0	432
7	Diurnal Changes in the Transcriptome Encoding Enzymes of Starch Metabolism Provide Evidence for Both Transcriptional and Posttranscriptional Regulation of Starch Metabolism in Arabidopsis Leaves. Plant Physiology, 2004, 136, 2687-2699.	2.3	364
8	Normal growth of <i>Arabidopsis</i> requires cytosolic invertase but not sucrose synthase. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 13124-13129.	3.3	349
9	Quantification of starch in plant tissues. Nature Protocols, 2006, 1, 1342-1345.	5.5	303
10	Î²-AMYLASE4, a Noncatalytic Protein Required for Starch Breakdown, Acts Upstream of Three Active Î²-Amylases in <i>Arabidopsis</i> Chloroplasts Â. Plant Cell, 2008, 20, 1040-1058.	3.1	285
11	Analysis of the sucrose synthase gene family in Arabidopsis. Plant Journal, 2007, 49, 810-828.	2.8	280
12	Standards for plant synthetic biology: a common syntax for exchange of <scp>DNA</scp> parts. New Phytologist, 2015, 208, 13-19.	3.5	263
13	The Arabidopsis <i>sex1</i> Mutant Is Defective in the R1 Protein, a General Regulator of Starch Degradation in Plants, and Not in the Chloroplast Hexose Transporter. Plant Cell, 2001, 13, 1907-1918.	3.1	259
14	A critical role for disproportionating enzyme in starch breakdown is revealed by a knock-out mutation in Arabidopsis. Plant Journal, 2001, 26, 89-100.	2.8	242
15	A cytosolic glucosyltransferase is required for conversion of starch to sucrose inArabidopsisleaves at night. Plant Journal, 2004, 37, 853-863.	2.8	242
16	Starch and the clock: the dark side of plant productivity. Trends in Plant Science, 2011, 16, 169-175.	4.3	235
17	A Mutant of Arabidopsis Lacking a Chloroplastic Isoamylase Accumulates Both Starch and Phytoglycogen. Plant Cell, 1998, 10, 1699-1711.	3.1	234
18	Plastidial Î±-Glucan Phosphorylase Is Not Required for Starch Degradation in Arabidopsis Leaves But Has a Role in the Tolerance of Abiotic Stress. Plant Physiology, 2004, 135, 849-858.	2.3	229

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19	The Biosynthesis of Starch Granules. Biomacromolecules, 2001, 2, 335-341.	2.6	228
20	A combined reduction in activity of starch synthases II and III of potato has novel effects on the starch of tubers. Plant Journal, 1999, 17, 251-261.	2.8	213
21	STARCH-EXCESS4 Is a Laforin-Like Phosphoglucan Phosphatase Required for Starch Degradation in <i>Arabidopsis thaliana</i> Â Â. Plant Cell, 2009, 21, 334-346.	3.1	208
22	A starchâ€accumulating mutant of Arabidopsis thaliana deficient in a chloroplastic starchâ€hydrolysing enzyme. Plant Journal, 1998, 15, 357-365.	2.8	197
23	Distinct isoforms of ADPglucose pyrophosphorylase occur inside and outside the amyloplasts in barley endosperm. Plant Journal, 1996, 10, 243-250.	2.8	194
24	Antisense expression of a sucrose non-fermenting-1-related protein kinase sequence in potato results in decreased expression of sucrose synthase in tubers and loss of sucrose-inducibility of sucrose synthase transcripts in leaves. Plant Journal, 1998, 14, 195-202.	2.8	187
25	Pathways of carbohydrate fermentation in the roots of marsh plants. Planta, 1979, 146, 327-334.	1.6	173
26	A Cytosolic ADP-Glucose Pyrophosphorylase Is a Feature of Graminaceous Endosperms, But Not of Other Starch-Storing Organs. Plant Physiology, 2001, 125, 818-827.	2.3	167
27	Major differences in isoforms of starch-branching enzyme between developing embryos of round- and wrinkled-seeded peas (Pisum sativum L.). Planta, 1988, 175, 270-279.	1.6	166
28	Glycine decarboxylase is confined to the bundle-sheath cells of leaves of C3?C4 intermediate species. Planta, 1988, 175, 452-459.	1.6	166
29	Starch branching enzymes belonging to distinct enzyme families are differentially expressed during pea embryo development. Plant Journal, 1995, 7, 3-15.	2.8	165
30	Starch Synthesis in Arabidopsis. Granule Synthesis, Composition, and Structure. Plant Physiology, 2002, 129, 516-529.	2.3	164
31	Three Isoforms of Isoamylase Contribute Different Catalytic Properties for the Debranching of Potato Glucans[W]. Plant Cell, 2003, 15, 133-149.	3.1	161
32	Callose Synthase GSL7 Is Necessary for Normal Phloem Transport and Inflorescence Growth in Arabidopsis Â Â. Plant Physiology, 2011, 155, 328-341.	2.3	158
33	The elongation of amylose and amylopectin chains in isolated starch granules. Plant Journal, 1996, 10, 1135-1143.	2.8	155
34	Prospects for increasing starch and sucrose yields for bioethanol production. Plant Journal, 2008, 54, 546-558.	2.8	155
35	The control of amylose synthesis. Journal of Plant Physiology, 2001, 158, 479-487.	1.6	154
36	At least three different RNA polymerase holoenzymes direct transcription of the agarase gene (dagA) of streptomyces coelicolor A3(2). Cell, 1988, 52, 599-607.	13.5	153

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37	Î±-Amylase Is Not Required for Breakdown of Transitory Starch in Arabidopsis Leaves. Journal of Biological Chemistry, 2005, 280, 9773-9779.	1.6	150
38	Starch granule initiation is controlled by a heteromultimeric isoamylase in potato tubers. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 2215-2220.	3.3	147
39	Soluble isoforms of starch synthase and starch-branching enzyme also occur within starch granules in developing pea embryos. Plant Journal, 1993, 4, 191-198.	2.8	140
40	The <i>rb</i> Mutation of Peas Causes Structural and Regulatory Changes in ADP Glucose Pyrophosphorylase from Developing Embryos. Plant Physiology, 1992, 99, 1626-1634.	2.3	135
41	Biochemical and molecular characterization of a novel starch synthase from potato tubers. Plant Journal, 1995, 8, 283-294.	2.8	134
42	Similar Protein Phosphatases Control Starch Metabolism in Plants and Glycogen Metabolism in Mammals. Journal of Biological Chemistry, 2006, 281, 11815-11818.	1.6	134
43	Arabidopsis plants perform arithmetic division to prevent starvation at night. ELife, 2013, 2, e00669.	2.8	134
44	Characterization of cDNAs encoding two isoforms of granule-bound starch synthase which show differential expression in developing storage organs of pea and potato.. Plant Journal, 1992, 2, 193-202.	2.8	133
45	Multiple, Distinct Isoforms of Sucrose Synthase in Pea. Plant Physiology, 2001, 127, 655-664.	2.3	130
46	Discovery of an Amylose-free Starch Mutant in Cassava (<i>Manihot esculenta</i> Crantz). Journal of Agricultural and Food Chemistry, 2007, 55, 7469-7476.	2.4	129
47	Photorespiratory metabolism and immunogold localization of photorespiratory enzymes in leaves of C3 and C3-C4 intermediate species of Moricandia. Planta, 1988, 173, 298-308.	1.6	127
48	The breakdown of starch in leaves. New Phytologist, 2004, 163, 247-261.	3.5	118
49	Effects of anaerobiosis on carbohydrate oxidation by roots of Pisum sativum. Phytochemistry, 1979, 18, 1453-1458.	1.4	109
50	The Altered Pattern of Amylose Accumulation in the Endosperm of Low-Amylose Barley Cultivars Is Attributable to a Single Mutant Allele of Granule-Bound Starch Synthase I with a Deletion in the 5â€²-Non-Coding Region. Plant Physiology, 2002, 130, 190-198.	2.3	107
51	Cas9â€mediated mutagenesis of potato starchâ€branching enzymes generates a range of tuber starch phenotypes. Plant Biotechnology Journal, 2019, 17, 2259-2271.	4.1	105
52	Evidence that the rb Locus Alters the Starch Content of Developing Pea Embryos through an Effect on ADP Glucose Pyrophosphorylase. Plant Physiology, 1989, 89, 1279-1284.	2.3	103
53	A Putative Phosphatase, LSF1, Is Required for Normal Starch Turnover in Arabidopsis Leaves. Plant Physiology, 2010, 152, 685-697.	2.3	102
54	Starch: A Flexible, Adaptable Carbon Store Coupled to Plant Growth. Annual Review of Plant Biology, 2020, 71, 217-245.	8.6	100

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55	Introducing an algal carbonâ€concentrating mechanism into higher plants: location and incorporation of key components. Plant Biotechnology Journal, 2016, 14, 1302-1315.	4.1	96
56	Control of Starch Granule Numbers in Arabidopsis Chloroplasts Â Â. Plant Physiology, 2012, 158, 905-916.	2.3	95
57	Starch metabolism in developing embryos of oilseed rape. Planta, 1997, 203, 480-487.	1.6	93
58	Starch synthase 4 is essential for coordination of starch granule formation with chloroplast division during Arabidopsis leaf expansion. New Phytologist, 2013, 200, 1064-1075.	3.5	93
59	Making starch. Current Opinion in Plant Biology, 1999, 2, 223-229.	3.5	92
60	Mutations at therug4locus alter the carbon and nitrogen metabolism of pea plants through an effect on sucrose synthase. Plant Journal, 1999, 17, 353-362.	2.8	88
61	The Transport of Sugars to Developing Embryos Is Not via the Bulk Endosperm in Oilseed Rape Seeds Â Â. Plant Physiology, 2008, 147, 2121-2130.	2.3	86
62	Evidence that the â€œwaxyâ€•protein of pea (Pisum sativum L.) is not the major starch-granule-bound starch synthase. Planta, 1990, 182, 599-604.	1.6	82
63	Role of Granule-bound Starch Synthase in Determination of Amylopectin Structure and Starch Granule Morphology in Potato. Journal of Biological Chemistry, 2002, 277, 10834-10841.	1.6	82
64	Leaf Starch Turnover Occurs in Long Days and in Falling Light at the End of the Day. Plant Physiology, 2017, 174, 2199-2212.	2.3	80
65	Importance of isoforms of starch-branching enzyme in determining the structure of starch in pea leaves. Plant Journal, 1997, 11, 31-43.	2.8	78
66	Regulatory Properties of ADP Glucose Pyrophosphorylase Are Required for Adjustment of Leaf Starch Synthesis in Different Photoperiods Â Â. Plant Physiology, 2014, 166, 1733-1747.	2.3	78
67	Growth Ring Formation in the Starch Granules of Potato Tubers. Plant Physiology, 2003, 132, 365-371.	2.3	74
68	Wheat Grain Filling Is Limited by Grain Filling Capacity rather than the Duration of Flag Leaf Photosynthesis: A Case Study Using NAM RNAi Plants. PLoS ONE, 2015, 10, e0134947.	1.1	73
69	Starch mobilization in leaves. Journal of Experimental Botany, 2003, 54, 577-583.	2.4	71
70	A transglucosidase necessary for starch degradation and maltose metabolism in leaves at night acts on cytosolic heteroglycans (SHG). Plant Journal, 2006, 46, 668-684.	2.8	71
71	The Role of Î±-Glucosidase in Germinating Barley Grains Â Â. Plant Physiology, 2011, 155, 932-943.	2.3	70
72	The capacity of plastids from developing pea cotyledons to synthesise acetyl CoA. Planta, 1988, 173, 172-182.	1.6	66

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73	Starch turnover in developing oilseed embryos. New Phytologist, 2010, 187, 791-804.	3.5	66
74	Glucan, Water Dikinase Exerts Little Control over Starch Degradation in Arabidopsis Leaves at Night Â Â. Plant Physiology, 2014, 165, 866-879.	2.3	65
75	Starch in the Arabidopsis plant. Starch/Staerke, 2012, 64, 421-434.	1.1	64
76	The Starch Granule-Associated Protein EARLY STARVATION1 Is Required for the Control of Starch Degradation in <i>Arabidopsis thaliana</i> Leaves. Plant Cell, 2016, 28, 1472-1489.	3.1	64
77	A Suite of <i>Lotus japonicus</i> Starch Mutants Reveals Both Conserved and Novel Features of Starch Metabolism Â Â. Plant Physiology, 2010, 154, 643-655.	2.3	63
78	Specificity of starch synthase isoforms from potato. FEBS Journal, 1999, 266, 724-736.	0.2	62
79	Induction and Identification of a Small-Granule, High-Amylose Mutant in Cassava (<i>Manihot) Tj ETQq1 1 0.784314 rgBT /Overlock 10	2.4	62
80	Rubisco small subunits from the unicellular green alga <i>Chlamydomonas</i> complement Rubiscoâ€deficient mutants of Arabidopsis. New Phytologist, 2017, 214, 655-667.	3.5	62
81	Complex, localized changes in CO2 assimilation and starch content associated with the susceptible interaction between cucumber mosaic virus and a cucurbit host. Plant Journal, 1994, 5, 837-847.	2.8	61
82	The relationship between the rate of starch synthesis, the adenosine 5â€²-diphosphoglucose concentration and the amylose content of starch in developing pea embryos. Planta, 1999, 209, 324-329.	1.6	59
83	Starch granule initiation and morphogenesisâ€"progress in Arabidopsis and cereals. Journal of Experimental Botany, 2019, 70, 771-784.	2.4	56
84	The purification and characterisation of the two forms of soluble starch synthase from developing pea embryos. Planta, 1992, 186, 609-17.	1.6	55
85	The importance of starch biosynthesis in the wrinkled seed shape character of peas studied by Mendel. Plant Molecular Biology, 1993, 22, 525-531.	2.0	55
86	Discrete Forms of Amylose Are Synthesized by Isoforms of GBSSI in Pea[W]. Plant Cell, 2002, 14, 1767-1785.	3.1	53
87	Multiple circadian clock outputs regulate diel turnover of carbon and nitrogen reserves. Plant, Cell and Environment, 2019, 42, 549-573.	2.8	49
88	The effect of waxy mutations on the granule-bound starch synthases of barley and maize endosperms. Planta, 1996, 198, 230.	1.6	45
89	The Priming of Amylose Synthesis in Arabidopsis Leaves. Plant Physiology, 2002, 128, 1069-1076.	2.3	40
90	Final grain weight is not limited by the activity of key starch-synthesising enzymes during grain filling in wheat. Journal of Experimental Botany, 2018, 69, 5461-5475.	2.4	38

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91	Starch-Branching Enzyme IIa Is Required for Proper Diurnal Cycling of Starch in Leaves of Maize Â. Plant Physiology, 2011, 156, 479-490.	2.3	36
92	Altered Starch Turnover in the Maternal Plant Has Major Effects on Arabidopsis Fruit Growth and Seed Composition Â Â. Plant Physiology, 2012, 160, 1175-1186.	2.3	36
93	A Bacterial Glucanotransferase Can Replace the Complex Maltose Metabolism Required for Starch to Sucrose Conversion in Leaves at Night. Journal of Biological Chemistry, 2013, 288, 28581-28598.	1.6	34
94	A Mutant of Arabidopsis Lacking a Chloroplastic Isoamylase Accumulates Both Starch and Phytoglycogen. Plant Cell, 1998, 10, 1699.	3.1	28
95	Mutations in the Gene Encoding Starch Synthase II Profoundly Alter Amylopectin Structure in Pea Embryos. Plant Cell, 1998, 10, 413.	3.1	24
96	Barley mutants with low rates of endosperm starch synthesis have low grain dormancy and high susceptibility to preharvest sprouting. New Phytologist, 2012, 194, 158-167.	3.5	23
97	Identification of the Major Starch Synthase in the Soluble Fraction of Potato Tubers. Plant Cell, 1996, 8, 1121.	3.1	22
98	Sucrose synthases are not involved in starch synthesis in Arabidopsis leaves. Nature Plants, 2022, 8, 574-582.	4.7	21
99	Source of sugar nucleotides for starch and cellulose synthesis. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E776; author reply E777.	3.3	20
100	Root Starch Reserves Are Necessary for Vigorous Re-Growth following Cutting Back in Lotus japonicus. PLoS ONE, 2014, 9, e87333.	1.1	20
101	The Maltase Involved in Starch Metabolism in Barley Endosperm Is Encoded by a Single Gene. PLoS ONE, 2016, 11, e0151642.	1.1	19
102	Rising rates of starch degradation during daytime and trehalose 6-phosphate optimize carbon availability. Plant Physiology, 2022, 189, 1976-2000.	2.3	18
103	Restriction of cytosolic sucrose hydrolysis profoundly alters development, metabolism, and gene expression in Arabidopsis roots. Journal of Experimental Botany, 2021, 72, 1850-1863.	2.4	14
104	Use of advanced recombinant lines to study the impact and potential of mutations affecting starch synthesis in barley. Journal of Cereal Science, 2014, 59, 196-202.	1.8	13
105	Natural Polymorphisms in Arabidopsis Result in Wide Variation or Loss of the Amylose Component of Starch. Plant Physiology, 2020, 182, 870-881.	2.3	11
106	Introduction of glucan synthase into the cytosol in wheat endosperm causes massive maltose accumulation and represses starch synthesis. Plant Journal, 2021, 106, 1431-1442.	2.8	7
107	Rapid marker-assisted development of advanced recombinant lines from barley starch mutants. Molecular Breeding, 2014, 33, 243-248.	1.0	6
108	Sucrose and Starch Metabolism. Compendium of Plant Genomes, 2014, , 97-115.	0.3	3

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109	A dominant mutation in <i>Î²-AMYLASE1</i> disrupts nighttime control of starch degradation in Arabidopsis leaves. Plant Physiology, 2022, 188, 1979-1992.	2.3	3
110	Starch Degradation in Leaves. Journal of Applied Glycoscience (1999), 2003, 50, 173-176.	0.3	2
111	The <i>Arabidopsis</i> Framework Model version 2 predicts the organism-level effects of circadian clock gene mis-regulation. In Silico Plants, 2022, 4, .	0.8	2