Samuel C Zeeman

List of Publications by Citations

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86 papers	7,451 citations	45 h-index	86 g-index
97 ext. papers	8,847 ext. citations	8.6 avg, IF	6.04 L-index

#	Paper	IF	Citations
86	Starch: its metabolism, evolution, and biotechnological modification in plants. *Annual Review of Plant Biology*, **2010**, 61, 209-34	30.7	652
85	Starch turnover: pathways, regulation and role in growth. *Current Opinion in Plant Biology*, **2012**, 15, 282-92	9.9	452
84	A previously unknown maltose transporter essential for starch degradation in leaves. *Science*, **2004**, 303, 87-9	33.3	370
83	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, 2687-99	6.6	323
82	Quantification of starch in plant tissues. *Nature Protocols*, **2006**, 1, 1342-5	18.8	248
81	Beta-AMYLASE4, a noncatalytic protein required for starch breakdown, acts upstream of three active beta-amylases in Arabidopsis chloroplasts. *Plant Cell*, **2008**, 20, 1040-58	11.6	228
80	The Arabidopsis sex1 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, 1907-18	11.6	228
79	A mutant of Arabidopsis lacking a chloroplastic isoamylase accumulates both starch and phytoglycogen. *Plant Cell*, **1998**, 10, 1699-712	11.6	219
78	A cytosolic glucosyltransferase is required for conversion of starch to sucrose in Arabidopsis leaves at night. *Plant Journal*, **2004**, 37, 853-63	6.9	212
77	A critical role for disproportionating enzyme in starch breakdown is revealed by a knock-out mutation in Arabidopsis. *Plant Journal*, **2001**, 26, 89-100	6.9	200
76	Plastidial alpha-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, 849-58	6.6	191
75	A starch-accumulating mutant of Arabidopsis thaliana deficient in a chloroplastic starch-hydrolysing enzyme. *Plant Journal*, **1998**, 15, 357-65	6.9	183
74	STARCH-EXCESS4 is a laforin-like Phosphoglucan phosphatase required for starch degradation in Arabidopsis thaliana. *Plant Cell*, **2009**, 21, 334-46	11.6	180
73	Formation of starch in plant cells. *Cellular and Molecular Life Sciences*, **2016**, 73, 2781-807	10.3	168
72	Starch metabolism in Arabidopsis. *The Arabidopsis Book*, **2012**, 10, e0160	3	166
71	Regulation of Leaf Starch Degradation by Abscisic Acid Is Important for Osmotic Stress Tolerance in Plants. *Plant Cell*, **2016**, 28, 1860-78	11.6	157
70	Arabidopsis mutants Atisa1 and Atisa2 have identical phenotypes and lack the same multimeric isoamylase, which influences the branch point distribution of amylopectin during starch synthesis. *Plant Journal*, **2005**, 41, 815-30	6.9	152

69	Regulation of starch metabolism: the age of enlightenment?. *Current Opinion in Plant Biology*, **2010**, 13, 321-9	9.9	149
68	Starch synthesis in Arabidopsis. Granule synthesis, composition, and structure. *Plant Physiology*, **2002**, 129, 516-29	6.6	144
67	The control of amylose synthesis. *Journal of Plant Physiology*, **2001**, 158, 479-487	3.6	131
66	alpha-Amylase is not required for breakdown of transitory starch in Arabidopsis leaves. *Journal of Biological Chemistry*, **2005**, 280, 9773-9	5.4	128
65	Similar protein phosphatases control starch metabolism in plants and glycogen metabolism in mammals. *Journal of Biological Chemistry*, **2006**, 281, 11815-8	5.4	123
64	Trehalose 6-phosphate coordinates organic and amino acid metabolism with carbon availability. *Plant Journal*, **2016**, 85, 410-23	6.9	120
63	Evidence for distinct mechanisms of starch granule breakdown in plants. *Journal of Biological Chemistry*, **2006**, 281, 12050-9	5.4	115
62	Starch granule biosynthesis in Arabidopsis is abolished by removal of all debranching enzymes but restored by the subsequent removal of an endoamylase. *Plant Cell*, **2008**, 20, 3448-66	11.6	109
61	Blocking the metabolism of starch breakdown products in Arabidopsis leaves triggers chloroplast degradation. *Molecular Plant*, **2009**, 2, 1233-46	14.4	106
60	PROTEIN TARGETING TO STARCH is required for localising GRANULE-BOUND STARCH SYNTHASE to starch granules and for normal amylose synthesis in Arabidopsis. *PLoS Biology*, **2015**, 13, e1002080	9.7	100
59	The phosphoglucan phosphatase like sex Four2 dephosphorylates starch at the C3-position in Arabidopsis. *Plant Cell*, **2011**, 23, 4096-111	11.6	95
58	A putative phosphatase, LSF1, is required for normal starch turnover in Arabidopsis leaves. *Plant Physiology*, **2010**, 152, 685-97	6.6	84
57	Mutagenesis of cysteine 81 prevents dimerization of the APS1 subunit of ADP-glucose pyrophosphorylase and alters diurnal starch turnover in Arabidopsis thaliana leaves. *Plant Journal*, **2012**, 70, 231-42	6.9	72
56	-amylase-like proteins function as transcription factors in Arabidopsis, controlling shoot growth and development. *Plant Cell*, **2011**, 23, 1391-403	11.6	72
55	Accelerated ex situ breeding of - and -edited cassava for modified starch. *Science Advances*, **2018**, 4, eaat6086	6.3	71
54	Arabidopsis thaliana AMY3 is a unique redox-regulated chloroplastic -amylase. *Journal of Biological Chemistry*, **2013**, 288, 33620-33633	5.4	67
53	Starch synthase 4 is essential for coordination of starch granule formation with chloroplast division during Arabidopsis leaf expansion. *New Phytologist*, **2013**, 200, 1064-75	9.8	67
52	Homologs of PROTEIN TARGETING TO STARCH Control Starch Granule Initiation in Arabidopsis Leaves. *Plant Cell*, **2017**, 29, 1657-1677	11.6	66

51	Plastid thylakoid architecture optimizes photosynthesis in diatoms. *Nature Communications*, **2017**, 8, 15885	17.4	65
50	The Laforin-like dual-specificity phosphatase SEX4 from Arabidopsis hydrolyzes both C6- and C3-phosphate esters introduced by starch-related dikinases and thereby affects phase transition of alpha-glucans. *Plant Physiology*, **2010**, 152, 711-22	6.6	65
49	Starch breakdown: recent discoveries suggest distinct pathways and novel mechanisms. *Functional Plant Biology*, **2007**, 34, 465-473	2.7	63
48	Plastidial NAD-dependent malate dehydrogenase is critical for embryo development and heterotrophic metabolism in Arabidopsis. *Plant Physiology*, **2014**, 164, 1175-90	6.6	59
47	Carbon partitioning in Arabidopsis thaliana is a dynamic process controlled by the plants metabolic status and its circadian clock. *Plant, Cell and Environment*, **2015**, 38, 1965-79	8.4	57
46	Loss of starch granule initiation has a deleterious effect on the growth of arabidopsis plants due to an accumulation of ADP-glucose. *Plant Physiology*, **2013**, 163, 75-85	6.6	57
45	Comprehensive survey of redox sensitive starch metabolising enzymes in Arabidopsis thaliana. *Plant Physiology and Biochemistry*, **2012**, 58, 89-97	5.4	56
44	Progress in Arabidopsis starch research and potential biotechnological applications. *Current Opinion in Biotechnology*, **2011**, 22, 271-80	11.4	52
43	Loss of cytosolic phosphoglucomutase compromises gametophyte development in Arabidopsis. *Plant Physiology*, **2010**, 154, 1659-71	6.6	47
42	The simultaneous abolition of three starch hydrolases blocks transient starch breakdown in Arabidopsis. *Journal of Biological Chemistry*, **2012**, 287, 41745-56	5.4	47
41	Leaf Starch Turnover Occurs in Long Days and in Falling Light at the End of the Day. *Plant Physiology*, **2017**, 174, 2199-2212	6.6	44
40	The Starch Granule-Associated Protein EARLY STARVATION1 Is Required for the Control of Starch Degradation in Arabidopsis thaliana Leaves. *Plant Cell*, **2016**, 28, 1472-89	11.6	41
39	Analysis of starch metabolism in chloroplasts. *Methods in Molecular Biology*, **2011**, 775, 387-410	1.4	41
38	Genetic Evidence That Chain Length and Branch Point Distributions Are Linked Determinants of Starch Granule Formation in Arabidopsis. *Plant Physiology*, **2014**, 165, 1457-1474	6.6	39
37	Two Plastidial Coiled-Coil Proteins Are Essential for Normal Starch Granule Initiation in Arabidopsis. *Plant Cell*, **2018**, 30, 1523-1542	11.6	37
36	The Enzyme-Like Domain of Arabidopsis Nuclear Amylases Is Critical for DNA Sequence Recognition and Transcriptional Activation. *Plant Cell*, **2014**, 26, 1746-1763	11.6	34
35	The priming of amylose synthesis in Arabidopsis leaves. *Plant Physiology*, **2002**, 128, 1069-76	6.6	34
34	Starch: A Flexible, Adaptable Carbon Store Coupled to Plant Growth. *Annual Review of Plant Biology* , **2020**, 71, 217-245	30.7	33

33	Plastidial NAD-Dependent Malate Dehydrogenase: A Moonlighting Protein Involved in Early Chloroplast Development through Its Interaction with an FtsH12-FtsHi Protease Complex. *Plant Cell*, **2018**, 30, 1745-1769	11.6	31
32	A device for single leaf labelling with CO2 isotopes to study carbon allocation and partitioning in Arabidopsis thaliana. *Plant Methods*, **2013**, 9, 45	5.8	29
31	The heteromultimeric debranching enzyme involved in starch synthesis in Arabidopsis requires both isoamylase1 and isoamylase2 subunits for complex stability and activity. *PLoS ONE*, **2013**, 8, e75223	3.7	24
30	Degradation of Glucan Primers in the Absence of Starch Synthase 4 Disrupts Starch Granule Initiation in Arabidopsis. *Journal of Biological Chemistry*, **2016**, 291, 20718-28	5.4	24
29	Distinct Functions of STARCH SYNTHASE 4 Domains in Starch Granule Formation. *Plant Physiology*, **2018**, 176, 566-581	6.6	23
28	Replacement of the endogenous starch debranching enzymes ISA1 and ISA2 of Arabidopsis with the rice orthologs reveals a degree of functional conservation during starch synthesis. *PLoS ONE*, **2014**, 9, e92174	3.7	22
27	STARCH SYNTHASE5, a Noncanonical Starch Synthase-Like Protein, Promotes Starch Granule Initiation in Arabidopsis. *Plant Cell*, **2020**, 32, 2543-2565	11.6	21
26	A whole-plant chamber system for parallel gas exchange measurements of Arabidopsis and other herbaceous species. *Plant Methods*, **2015**, 11, 48	5.8	19
25	Recreating the synthesis of starch granules in yeast. *ELife*, **2016**, 5,	8.9	19
24	The evolution of functional complexity within the β-amylase gene family in land plants. *BMC Evolutionary Biology*, **2019**, 19, 66	3	18
23	OCTOPUS-LIKE 2, a novel player in Arabidopsis root and vascular development, reveals a key role for OCTOPUS family genes in root metaphloem sieve tube differentiation. *New Phytologist*, **2017**, 216, 1191-1204	9.8	18
22	Metabolic profiles of six African cultivars of cassava (Manihot esculenta Crantz) highlight bottlenecks of root yield. *Plant Journal*, **2020**, 102, 1202-1219	6.9	17
21	LIKE SEX4 1 Acts as a β-Amylase-Binding Scaffold on Starch Granules during Starch Degradation. *Plant Cell*, **2019**, 31, 2169-2186	11.6	17
20	Changes in resource partitioning between and within organs support growth adjustment to neighbor proximity in seedlings. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, E9953-E9961	11.5	17
19	Modification of Cassava Root Starch Phosphorylation Enhances Starch Functional Properties. *Frontiers in Plant Science*, **2018**, 9, 1562	6.2	14
18	Simultaneous silencing of isoamylases ISA1, ISA2 and ISA3 by multi-target RNAi in potato tubers leads to decreased starch content and an early sprouting phenotype. *PLoS ONE*, **2017**, 12, e0181444	3.7	13
17	Evolutionary innovations in starch metabolism. *Current Opinion in Plant Biology*, **2020**, 55, 109-117	9.9	13
16	Alpha-Glucan, Water Dikinase 1 Affects Starch Metabolism and Storage Root Growth in Cassava (Manihot esculenta Crantz). *Scientific Reports*, **2017**, 7, 9863	4.9	12

15	A multifaceted analysis reveals two distinct phases of chloroplast biogenesis during de-etiolation in. *ELife*, **2021**, 10,	8.9	12
14	Technology generation to dissemination: lessons learned from the tef improvement project. *Euphytica*, **2018**, 214, 1	2.1	11
13	Morphological bases of phytoplankton energy management and physiological responses unveiled by 3D subcellular imaging. *Nature Communications*, **2021**, 12, 1049	17.4	10
12	Molecular Genetic Analysis of Glucan Branching Enzymes from Plants and Bacteria in Arabidopsis Reveals Marked Differences in Their Functions and Capacity to Mediate Starch Granule Formation. *Plant Physiology*, **2015**, 169, 1638-55	6.6	9
11	Theoretical and experimental approaches to understand the biosynthesis of starch granules in a physiological context. *Photosynthesis Research*, **2020**, 145, 55-70	3.7	8
10	Repression of and Orthologs in Potato Increases Tuber Starch Bound Phosphate With Concomitant Alterations in Starch Physical Properties. *Frontiers in Plant Science*, **2018**, 9, 1044	6.2	8
9	Linking circadian time to growth rate quantitatively via carbon metabolism		6
8	Design and Use of a Digitally Controlled Device for Accurate, Multiplexed Gas Exchange Measurements of the Complete Foliar Parts of Plants. *Methods in Molecular Biology*, **2018**, 1770, 45-68	1.4	3
7	Amylopectin Chain Length Dynamics and Activity Signatures of Key Carbon Metabolic Enzymes Highlight Early Maturation as Culprit for Yield Reduction of Barley Endosperm Starch after Heat Stress. *Plant and Cell Physiology*, **2019**, 60, 2692-2706	4.9	3
6	Natural Wood-Based Catalytic Membrane Microreactors for Continuous Hydrogen Generation.. *ACS Applied Materials & Interfaces*, **2022**,	9.5	2
5	Coalescence and directed anisotropic growth of starch granule initials in subdomains of Arabidopsis thaliana chloroplasts. *Nature Communications*, **2021**, 12, 6944	17.4	2
4	Distinct plastid fructose bisphosphate aldolases function in photosynthetic and non-photosynthetic metabolism in Arabidopsis. *Journal of Experimental Botany*, **2021**, 72, 3739-3755	7	2
3	Ectopic maltase alleviates dwarf phenotype and improves plant frost tolerance of maltose transporter mutants. *Plant Physiology*, **2021**, 186, 315-329	6.6	2
2	ACA pumps maintain leaf excitability during herbivore onslaught.. *Current Biology*, **2022**,	6.3	1
1	Rising rates of starch degradation during daytime and trehalose 6-phosphate optimize carbon availability.. *Plant Physiology*, **2022**,	6.6	1