Peter Geigenberger

List of Publications by Year
in descending order

110 papers	12,367 citations	13827 67 h-index	24915 109 g-index
116 all docs	116 docs citations	116 times ranked	9868 citing authors

#	Article	IF	Citations
1	Response of plant metabolism to too little oxygen. Current Opinion in Plant Biology, 2003, 6, 247-256.	3.5	490
2	HRE1 and HRE2, two hypoxia-inducible ethylene response factors, affect anaerobic responses in Arabidopsis thaliana. Plant Journal, 2010, 62, 302-315.	2.8	384
3	Starch Synthesis in Potato Tubers Is Regulated by Post-Translational Redox Modification of ADP-Glucose Pyrophosphorylase. Plant Cell, 2002, 14, 2191-2213.	3.1	383
4	ADP-Glucose Pyrophosphorylase Is Activated by Posttranslational Redox-Modification in Response to Light and to Sugars in Leaves of Arabidopsis and Other Plant Species Â. Plant Physiology, 2003, 133, 838-849.	2.3	381
5	Symbiotic Leghemoglobins Are Crucial for Nitrogen Fixation in Legume Root Nodules but Not for General Plant Growth and Development. Current Biology, 2005, 15, 531-535.	1.8	350
6	Trehalose 6-phosphate regulates starch synthesis via posttranslational redox activation of ADP-glucose pyrophosphorylase. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 11118-11123.	3.3	347
7	Sucrose synthase catalyses a readily reversible reaction in vivo in developing potato tubers and other plant tissues. Planta, 1993, 189, 329-339.	1.6	330
8	Cold-induced repression of the rice anther-specific cell wall invertase gene OSINV4 is correlated with sucrose accumulation and pollen sterility. Plant, Cell and Environment, 2005, 28, 1534-1551.	2.8	309
9	Regulation of Starch Biosynthesis in Response to a Fluctuating Environment. Plant Physiology, 2011, 155, 1566-1577.	2.3	293
10	Analysis of the Compartmentation of Glycolytic Intermediates, Nucleotides, Sugars, Organic Acids, Amino Acids, and Sugar Alcohols in Potato Tubers Using a Nonaqueous Fractionation Method. Plant Physiology, 2001, 127, 685-700.	2.3	247
11	Identification of a Novel Enzyme Required for Starch Metabolism in Arabidopsis Leaves. The Phosphoglucan, Water Dikinase. Plant Physiology, 2005, 137, 242-252.	2.3	246
12	Regulation of Respiration and Fermentation to Control the Plant Internal Oxygen Concentration. Plant Physiology, 2009, 149, 1087-1098.	2.3	240
13	Increasing seed oil content in oil-seed rape (Brassica napus L.) by over-expression of a yeast glycerol-3-phosphate dehydrogenase under the control of a seed-specific promoter. Plant Biotechnology Journal, 2007, 5, 431-441.	4.1	229
14	Malate Plays a Crucial Role in Starch Metabolism, Ripening, and Soluble Solid Content of Tomato Fruit and Affects Postharvest Softening Â. Plant Cell, 2011, 23, 162-184.	3.1	227
15	NTRC links built-in thioredoxin to light and sucrose in regulating starch synthesis in chloroplasts and amyloplasts. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9908-9913.	3.3	216
16	Regulation of sucrose and starch metabolism in potato tubers in response to short-term water deficit. Planta, 1997, 201, 502-518.	1.6	202
17	Sucrose Transporter StSUT4 from Potato Affects Flowering, Tuberization, and Shade Avoidance Response. Plant Physiology, 2008, 146, 323-324.	2.3	202
18	Redox regulation of carbon storage and partitioning in response to light and sugars. Journal of Experimental Botany, 2005, 56, 1469-1479.	2.4	197

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19	Transcript and metabolite profiling of the adaptive response to mild decreases in oxygen concentration in the roots of arabidopsis plants. Annals of Botany, 2009, 103, 269-280.	1.4	197
20	Evidence that SNF1-related kinase and hexokinase are involved in separate sugar-signalling pathways modulating post-translational redox activation of ADP-glucose pyrophosphorylase in potato tubers. Plant Journal, 2003, 35, 490-500.	2.8	196
21	Combined expression of glucokinase and invertase in potato tubers leads to a dramatic reduction in starch accumulation and a stimulation of glycolysis. Plant Journal, 1998, 15, 109-118.	2.8	192
22	The Unprecedented Versatility of the Plantâ€Ž Thioredoxin System. Trends in Plant Science, 2017, 22, 249-262.	4.3	192
23	Phloem Metabolism and Function Have to Cope with Low Internal Oxygen. Plant Physiology, 2003, 131, 1529-1543.	2.3	186
24	Starch content and yield increase as a result of altering adenylate pools in transgenic plants. Nature Biotechnology, 2002, 20, 1256-1260.	9.4	176
25	Dynamic Plastid Redox Signals Integrate Gene Expression and Metabolism to Induce Distinct Metabolic States in Photosynthetic Acclimation in<i>Arabidopsis</i>Â. Plant Cell, 2009, 21, 2715-2732.	3.1	176
26	Sensitive and high throughput metabolite assays for inorganic pyrophosphate, ADPGlc, nucleotide phosphates, and glycolytic intermediates based on a novel enzymic cycling system. Plant Journal, 2002, 30, 221-235.	2.8	170
27	Comparative analysis between plant species of transcriptional and metabolic responses to hypoxia. New Phytologist, 2011, 190, 472-487.	3.5	157
28	Hypoxia responsive gene expression is mediated by various subsets of transcription factors and miRNAs that are determined by the actual oxygen availability. New Phytologist, 2011, 190, 442-456.	3.5	149
29	Flux an important, but neglected, component of functional genomics. Current Opinion in Plant Biology, 2005, 8, 174-182.	3.5	146
30	Community recommendations on terminology and procedures used in flooding and low oxygen stress research. New Phytologist, 2017, 214, 1403-1407.	3.5	146
31	Metabolic Control of Redox and Redox Control of Metabolism in Plants. Antioxidants and Redox Signaling, 2014, 21, 1389-1421.	2.5	143
32	Production of high-starch, low-glucose potatoes through over-expression of the metabolic regulator SnRK1. Plant Biotechnology Journal, 2006, 4, 409-418.	4.1	141
33	A Bypass of Sucrose Synthase Leads to Low Internal Oxygen and Impaired Metabolic Performance in Growing Potato Tubers. Plant Physiology, 2003, 132, 2058-2072.	2.3	135
34	Regulation of sucrose to starch conversion in growing potato tubers. Journal of Experimental Botany, 2003, 54, 457-465.	2.4	130
35	Sucrose non-fermenting kinase 1 (SnRK1) coordinates metabolic and hormonal signals during pea cotyledon growth and differentiation. Plant Journal, 2010, 61, 324-338.	2.8	122
36	A ?futile? cycle of sucrose synthesis and degradation is involved in regulating partitioning between sucrose, starch and respiration in cotyledons of germinating Ricinus communis L. seedlings when phloem transport is inhibited. Planta, 1991, 185, 81-90.	1.6	121

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37	Lipid Storage Metabolism Is Limited by the Prevailing Low Oxygen Concentrations within Developing Seeds of Oilseed Rape. Plant Physiology, 2003, 133, 2048-2060.	2.3	116
38	Genes driving potato tuber initiation and growth: identification based on transcriptional changes using the POCI array. Functional and Integrative Genomics, 2008, 8, 329-340.	1.4	114
39	Overexpression of pyrophosphatase leads to increased sucrose degradation and starch synthesis, increased activities of enzymes for sucrose-starch interconversions, and increased levels of nucleotides in growing potato tubers. Planta, 1998, 205, 428-437.	1.6	113
40	Discovering plant metabolic biomarkers for phenotype prediction using an untargeted approach. Plant Biotechnology Journal, 2010, 8, 900-911.	4.1	113
41	Changes of carbohydrates, metabolites and enzyme activities in potato tubers during development, and within a single tuber along astolon-apexgradient. Journal of Plant Physiology, 1993, 142, 392-402.	1.6	107
42	Sucrose is metabolised by sucrose synthase and glycolysis within the phloem complex of Ricinus communis L. seedlings. Planta, 1993, 190, 446.	1.6	102
43	Thioredoxins Play a Crucial Role in Dynamic Acclimation of Photosynthesis in Fluctuating Light. Molecular Plant, 2017, 10, 168-182.	3.9	102
44	Inactivation of thioredoxin <i>f</i>1 leads to decreased light activation of ADPâ€glucose pyrophosphorylase and altered diurnal starch turnover in leaves of <i>Arabidopsis</i> plants. Plant, Cell and Environment, 2013, 36, 16-29.	2.8	99
45	An Optical Multifrequency Phase-Modulation Method Using Microbeads for Measuring Intracellular Oxygen Concentrations in Plants. Biophysical Journal, 2005, 89, 1339-1345.	0.2	97
46	Tuber Physiology and Properties of Starch from Tubers of Transgenic Potato Plants with Altered Plastidic Adenylate Transporter Activity. Plant Physiology, 2001, 125, 1667-1678.	2.3	96
47	Redox Homeostasis in Photosynthetic Organisms: Novel and Established Thiol-Based Molecular Mechanisms. Antioxidants and Redox Signaling, 2019, 31, 155-210.	2.5	95
48	Combined Transcript and Metabolite Profiling of Arabidopsis Leaves Reveals Fundamental Effects of the Thiol-Disulfide Status on Plant Metabolism Â Â. Plant Physiology, 2006, 141, 412-422.	2.3	93
49	Rapid Classification of Phenotypic Mutants of Arabidopsis via Metabolite Fingerprinting. Plant Physiology, 2007, 143, 1484-1492.	2.3	87
50	Inhibition of de Novo Pyrimidine Synthesis in Growing Potato Tubers Leads to a Compensatory Stimulation of the Pyrimidine Salvage Pathway and a Subsequent Increase in Biosynthetic Performance. Plant Cell, 2005, 17, 2077-2088.	3.1	86
51	Decreased expression of sucrose phosphate synthase strongly inhibits the water stress-induced synthesis of sucrose in growing potato tubers. Plant Journal, 1999, 19, 119-129.	2.8	84
52	Phloem Import and Storage Metabolism Are Highly Coordinated by the Low Oxygen Concentrations within Developing Wheat Seeds. Plant Physiology, 2004, 135, 1809-1821.	2.3	84
53	The Sucrose Analog Palatinose Leads to a Stimulation of Sucrose Degradation and Starch Synthesis When Supplied to Discs of Growing Potato Tubers. Plant Physiology, 2001, 125, 1967-1977.	2.3	82
54	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

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55	Oxygen Sensing via the Ethylene Response Transcription Factor RAP2.12 Affects Plant Metabolism and Performance under Both Normoxia and Hypoxia. Plant Physiology, 2016, 172, 141-153.	2.3	82
56	Identification, subcellular localization and biochemical characterization of water-soluble heteroglycans (SHG) in leaves of Arabidopsis thaliana L.: distinct SHG reside in the cytosol and in the apoplast. Plant Journal, 2005, 43, 568-585.	2.8	81
57	Nonsymbiotic Hemoglobin-2 Leads to an Elevated Energy State and to a Combined Increase in Polyunsaturated Fatty Acids and Total Oil Content When Overexpressed in Developing Seeds of Transgenic Arabidopsis Plants. Plant Physiology, 2011, 155, 1435-1444.	2.3	80
58	High-Temperature Perturbation of Starch Synthesis Is Attributable to Inhibition of ADP-Glucose Pyrophosphorylase by Decreased Levels of Glycerate-3-Phosphate in Growing Potato Tubers1. Plant Physiology, 1998, 117, 1307-1316.	2.3	79
59	A rapid approach for phenotypeâ€screening and database independent detection of cSNP/protein polymorphism using mass accuracy precursor alignment. Proteomics, 2008, 8, 4214-4225.	1.3	78
60	The Plastidic Sugar Transporter pSuT Influences Flowering and Affects Cold Responses. Plant Physiology, 2019, 179, 569-587.	2.3	77
61	Thioredoxin f1 and NADPH-dependent thioredoxin reductase C have overlapping functions in regulating photosynthetic metabolism and plant growth in response to varying light conditions. Plant Physiology, 2015, 169, pp.01122.2015.	2.3	75
62	Combined Metabolomic and Genetic Approaches Reveal a Link between the Polyamine Pathway and Albumin 2 in Developing Pea Seeds. Plant Physiology, 2008, 146, 74-82.	2.3	73
63	Decreased Expression of Cytosolic Pyruvate Kinase in Potato Tubers Leads to a Decline in Pyruvate Resulting in an in Vivo Repression of the Alternative Oxidase Â. Plant Physiology, 2008, 148, 1640-1654.	2.3	73
64	Embryo-Specific Reduction of ADP-Glc Pyrophosphorylase Leads to an Inhibition of Starch Synthesis and a Delay in Oil Accumulation in Developing Seeds of Oilseed Rape. Plant Physiology, 2004, 136, 2676-2686.	2.3	72
65	Disruption of both chloroplastic and cytosolic FBPase genes results in a dwarf phenotype and important starch and metabolite changes in Arabidopsis thaliana. Journal of Experimental Botany, 2015, 66, 2673-2689.	2.4	72
66	When growing potato tubers are detached from their mother plant there is a rapid inhibition of starch synthesis, involving inhibition of ADP-glucose pyrophosphorylase. Planta, 1994, 193, 486-493.	1.6	71
67	Diurnal changes in sucrose, nucleotides, starch synthesis and AGPS transcript in growing potato tubers that are suppressed by decreased expression of sucrose phosphate synthase. Plant Journal, 2000, 23, 795-806X.	2.8	71
68	Sucrose-phosphate synthase is regulated via metabolites and protein phosphorylation in potato tubers, in a manner analogous to the enzyme in leaves. Planta, 1994, 192, 480.	1.6	70
69	The Potato-Specific Apyrase Is Apoplastically Localized and Has Influence on Gene Expression, Growth, and Development Â Â. Plant Physiology, 2008, 147, 1092-1109.	2.3	69
70	Trehalose 6â€phosphate promotes seed filling by activating auxin biosynthesis. New Phytologist, 2021, 229, 1553-1565.	3.5	67
71	NADPH Thioredoxin Reductase C and Thioredoxins Act Concertedly in Seedling Development. Plant Physiology, 2017, 174, 1436-1448.	2.3	62
72	Increased levels of glycerol-3-phosphate lead to a stimulation of flux into triacylglycerol synthesis after supplying glycerol to developing seeds of Brassica napus L. in planta. Planta, 2004, 219, 827-35.	1.6	60

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73	Low-oxygen response is triggered by an ATP-dependent shift in oleoyl-CoA in <i>Arabidopsis</i>. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E12101-E12110.	3.3	55
74	The central regulation of plant physiology by adenylates. Trends in Plant Science, 2010, 15, 98-105.	4.3	54
75	Metabolism in slices from growing potato tubers responds differently to addition of sucrose and glucose. Planta, 1998, 206, 234-244.	1.6	53
76	Tuber-specific expression of a yeast invertase and a bacterial glucokinase in potato leads to an activation of sucrose phosphate synthase and the creation of a sucrose futile cycle. Planta, 1999, 208, 227-238.	1.6	50
77	Analysis of Cytosolic Heteroglycans from Leaves of Transgenic Potato (Solanum tuberosum L.) Plants that Under- or Overexpress the Pho 2 Phosphorylase Isozyme. Plant and Cell Physiology, 2005, 46, 1987-2004.	1.5	50
78	Subcellular analysis of starch metabolism in developing barley seeds using a non-aqueous fractionation method. Journal of Experimental Botany, 2012, 63, 2071-2087.	2.4	50
79	A Possible Role for Pyrophosphate in the Coordination of Cytosolic and Plastidial Carbon Metabolism within the Potato Tuber. Plant Physiology, 2000, 123, 681-688.	2.3	49
80	Increased levels of adenine nucleotides modify the interaction between starch synthesis and respiration when adenine is supplied to discs from growing potato tubers. Planta, 2001, 212, 782-791.	1.6	49
81	Impaired Photoassimilate Partitioning Caused by Phloem-Specific Removal of Pyrophosphate Can Be Complemented by a Phloem-Specific Cytosolic Yeast-Derived Invertase in Transgenic Plants. Plant Cell, 1995, 7, 259.	3.1	46
82	Acclimation in plants â€“ the Green Hub consortium. Plant Journal, 2021, 106, 23-40.	2.8	44
83	A Cell Wall-Bound Adenosine Nucleosidase is Involved in the Salvage of Extracellular ATP in Solanum tuberosum. Plant and Cell Physiology, 2008, 49, 1572-1579.	1.5	42
84	Orotate leads to a specific increase in uridine nucleotide levels and a stimulation of sucrose degradation and starch synthesis in discs from growing potato tubers. Planta, 1999, 209, 314-323.	1.6	41
85	Contribution of adenosine 5â€²-diphosphoglucose pyrophosphorylase to the control of starch synthesis is decreased by water stress in growing potato tubers. Planta, 1999, 209, 338-345.	1.6	41
86	Temporally regulated expression of a yeast invertase in potato tubers allows dissection of the complex metabolic phenotype obtained following its constitutive expression. Plant Molecular Biology, 2004, 56, 91-110.	2.0	40
87	Chloroplasts are key players to cope with light and temperature stress. Trends in Plant Science, 2022, 27, 577-587.	4.3	37
88	Barley grains, deficient in cytosolic small subunit of ADPâ€glucose pyrophosphorylase, reveal coordinate adjustment of C:N metabolism mediated by an overlapping metabolicâ€hormonal control. Plant Journal, 2012, 69, 1077-1093.	2.8	36
89	Knocking down mitochondrial iron transporter (MIT) reprograms primary and secondary metabolism in rice plants. Journal of Experimental Botany, 2016, 67, 1357-1368.	2.4	36
90	Enhanced resistance to Phytophthora infestans and Alternaria solani in leaves and tubers, respectively, of potato plants with decreased activity of the plastidic ATP/ADP transporter. Planta, 2003, 217, 75-83.	1.6	34

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91	Thioredoxin <i>h2</i> contributes to the redox regulation of mitochondrial photorespiratory metabolism. Plant, Cell and Environment, 2020, 43, 188-208.	2.8	34
92	Metabolic and Developmental Adaptations of Growing Potato Tubers in Response to Specific Manipulations of the Adenylate Energy Status Â Â. Plant Physiology, 2008, 146, 1579-1598.	2.3	32
93	Arabidopsis tic62 trol Mutant Lacking Thylakoid-Bound Ferredoxinâ€“NADP+ Oxidoreductase Shows Distinct Metabolic Phenotype. Molecular Plant, 2014, 7, 45-57.	3.9	32
94	Regulation of carbon partitioning between sucrose and nitrogen assimilation in cotyledons of germinating Ricinus communis L. seedlings. Planta, 1991, 185, 563-8.	1.6	31
95	Unraveling the role of fermentation in the mode of action of acetolactate synthase inhibitors by metabolic profiling. Journal of Plant Physiology, 2011, 168, 1568-1575.	1.6	30
96	Decreased expression of plastidial adenylate kinase in potato tubers results in an enhanced rate of respiration and a stimulation of starch synthesis that is attributable to post-translational redox-activation of ADP-glucose pyrophosphorylase. Journal of Experimental Botany, 2008, 59, 315-325.	2.4	25
97	HRE-Type Genes are Regulated by Growth-Related Changes in Internal Oxygen Concentrations During the Normal Development of Potato (Solanum tuberosum) Tubers. Plant and Cell Physiology, 2011, 52, 1957-1972.	1.5	25
98	Expression of the chloroplast thioredoxins f and m is linked to short-term changes in the sugar and thiol status in leaves of Pisum sativum. Journal of Experimental Botany, 2012, 63, 4887-4900.	2.4	21
99	Use of Non-aqueous Fractionation and Metabolomics to Study Chloroplast Function in Arabidopsis. Methods in Molecular Biology, 2011, 775, 135-160.	0.4	21
100	NTRC Plays a Crucial Role in Starch Metabolism, Redox Balance, and Tomato Fruit Growth. Plant Physiology, 2019, 181, 976-992.	2.3	18
101	Lack of FIBRILLIN6 in <i>Arabidopsis thaliana</i> affects light acclimation and sulfate metabolism. New Phytologist, 2020, 225, 1715-1731.	3.5	15
102	Heterologous expression of a keto hexokinase in potato plants leads to inhibited rates of photosynthesis, severe growth retardation and abnormal leaf development. Planta, 2004, 218, 569-578.	1.6	12
103	Thioredoxin h2 and o1 Show Different Subcellular Localizations and Redox-Active Functions, and Are Extrachloroplastic Factors Influencing Photosynthetic Performance in Fluctuating Light. Antioxidants, 2021, 10, 705.	2.2	12
104	Metabolic regulation of pathways of carbohydrate oxidation in potato (<i>Solanum tuberosum</i>) tubers. Physiologia Plantarum, 2008, 133, 744-754.	2.6	10
105	TOM9.2 Is a Calmodulin-Binding Protein Critical for TOM Complex Assembly but Not for Mitochondrial Protein Import in Arabidopsis thaliana. Molecular Plant, 2017, 10, 575-589.	3.9	9
106	Conducting Molecular Biomarker Discovery Studies in Plants. Methods in Molecular Biology, 2012, 918, 127-150.	0.4	6
107	Plant redox biologyâ€”on the move. Plant Physiology, 2021, 186, 1-3.	2.3	3
108	A Cell Wall-Bound Adenosine Nucleosidase is Involved in the Salvage of Extracellular ATP in Solanum tuberosum. Plant and Cell Physiology, 2008, 49, 1765-1765.	1.5	2

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109	On the Elaborate Network of Thioredoxins in Higher Plants. Progress in Botany Fortschritte Der Botanik, 2018, , 223-251.	0.1	1
110	Editorial. Molecular Plant, 2009, 2, 369.	3.9	0