Nicholas C Carpita

List of Publications by Year
in descending order

96 papers	17,985 citations	44069 48 h-index	40979 93 g-index
102 all docs	102 docs citations	102 times ranked	16491 citing authors

#	Article	IF	Citations
1	The B73 Maize Genome: Complexity, Diversity, and Dynamics. Science, 2009, 326, 1112-1115.	12.6	3,612
2	Structural models of primary cell walls in flowering plants: consistency of molecular structure with the physical properties of the walls during growth. Plant Journal, 1993, 3, 1-30.	5.7	2,881
3	The Sorghum bicolor genome and the diversification of grasses. Nature, 2009, 457, 551-556.	27.8	2,642
4	Measurement of uronic acids without interference from neutral sugars. Analytical Biochemistry, 1991, 197, 157-162.	2.4	1,182
5	STRUCTURE AND BIOGENESIS OF THE CELL WALLS OF GRASSES. Annual Review of Plant Biology, 1996, 47, 445-476.	14.3	753
6	COBRA encodes a putative GPI-anchored protein, which is polarly localized and necessary for oriented cell expansion in Arabidopsis. Genes and Development, 2001, 15, 1115-1127.	5.9	335
7	Changes in Esterification of the Uronic Acid Groups of Cell Wall Polysaccharides during Elongation of Maize Coleoptiles. Plant Physiology, 1992, 98, 646-653.	4.8	317
8	The MUR3 Gene of Arabidopsis Encodes a Xyloglucan Galactosyltransferase That Is Evolutionarily Related to Animal Exostosins. Plant Cell, 2003, 15, 1662-1670.	6.6	304
9	Cell Wall Architecture of the Elongating Maize Coleoptile. Plant Physiology, 2001, 127, 551-565.	4.8	263
10	The mur2 mutant of Arabidopsis thaliana lacks fucosylated xyloglucan because of a lesion in fucosyltransferase AtFUT1. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 3340-3345.	7.1	256
11	<i>MYB61</i> Is Required for Mucilage Deposition and Extrusion in the Arabidopsis Seed Coat. Plant Cell, 2001, 13, 2777-2791.	6.6	253
12	Tracing Cell Wall Biogenesis in Intact Cells and Plants. Plant Physiology, 1991, 97, 551-561.	4.8	204
13	A rapid method to screen for cell-wall mutants using discriminant analysis of Fourier transform infrared spectra. Plant Journal, 1998, 16, 385-392.	5.7	202
14	Biomass recalcitrance: a multi-scale, multi-factor, and conversion-specific property: Fig. 1.. Journal of Experimental Botany, 2015, 66, 4109-4118.	4.8	197
15	Designing the deconstruction of plant cell walls. Current Opinion in Plant Biology, 2008, 11, 314-320.	7.1	186
16	Maize and sorghum: genetic resources for bioenergy grasses. Trends in Plant Science, 2008, 13, 415-420.	8.8	172
17	Novel Rhamnogalacturonan I and Arabinoxylan Polysaccharides of Flax Seed Mucilage. Plant Physiology, 2008, 148, 132-141.	4.8	170
18	Molecular Breeding to Enhance Ethanol Production from Corn and Sorghum Stover. Crop Science, 2007, 47, S-142.	1.8	154

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19	Genetic Resources for Maize Cell Wall Biology Â Â Â. Plant Physiology, 2009, 151, 1703-1728.	4.8	152
20	Cell Wall Development in Maize Coleoptiles. Plant Physiology, 1984, 76, 205-212.	4.8	150
21	Mixed Linkage (1â†'3),(1â†'4)-Î²-d-Glucans of Grasses. Cereal Chemistry, 2004, 81, 115-127.	2.2	140
22	Loss of Highly Branched Arabinans and Debranching of Rhamnogalacturonan I Accompany Loss of Firm Texture and Cell Separation during Prolonged Storage of Apple. Plant Physiology, 2004, 135, 1305-1313.	4.8	131
23	Update on Mechanisms of Plant Cell Wall Biosynthesis: How Plants Make Cellulose and Other (1â†'4)-Î²-<scp>d</scp>-Glycans. Plant Physiology, 2011, 155, 171-184.	4.8	126
24	Maize <i>Brittle stalk2</i> Encodes a COBRA-Like Protein Expressed in Early Organ Development But Required for Tissue Flexibility at Maturity. Plant Physiology, 2007, 145, 1444-1459.	4.8	116
25	The Mechanism of Synthesis of a Mixed-Linkage (1â†'3),(1â†'4)Î²-d-Glucan in Maize. Evidence for Multiple Sites of Glucosyl Transfer in the Synthase Complex1. Plant Physiology, 1999, 120, 1105-1116.	4.8	113
26	The Galactose Residues of Xyloglucan Are Essential to Maintain Mechanical Strength of the Primary Cell Walls in Arabidopsis during Growth. Plant Physiology, 2004, 134, 443-451.	4.8	113
27	Changes in pectin structure and localization during the growth of unadapted and NaCl-adapted tobacco cells. Plant Journal, 1994, 5, 773-785.	5.7	110
28	Enrichment of vitronectin- and fibronectin-like proteins in NaCl-adapted plant cells and evidence for their involvement in plasma membrane-cell wall adhesion. Plant Journal, 1993, 3, 637-646.	5.7	106
29	Title is missing!. , 2001, 47, 145-160.		98
30	Cell Wall and Membrane-Associated Exo-Î²-d-Glucanases from Developing Maize Seedlings. Plant Physiology, 2000, 123, 471-486.	4.8	93
31	Small-interfering RNAs from natural antisense transcripts derived from a cellulose synthase gene modulate cell wall biosynthesis in barley. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 20534-20539.	7.1	91
32	Genomics of plant cell wall biogenesis. Planta, 2005, 221, 747-751.	3.2	90
33	Approaches to understanding the functional architecture of the plant cell wall. Phytochemistry, 2001, 57, 811-821.	2.9	83
34	Fractionation of hemicelluloses from maize cell walls with increasing concentrations of alkali. Phytochemistry, 1984, 23, 1089-1093.	2.9	81
35	Progress in the biological synthesis of the plant cell wall: new ideas for improving biomass for bioenergy. Current Opinion in Biotechnology, 2012, 23, 330-337.	6.6	79
36	Hemicellulosic Polymers of Cell Walls of Zea Coleoptiles. Plant Physiology, 1983, 72, 515-521.	4.8	78

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37	Extraction of starch by dimethyl sulfoxide and quantitation by enzymatic assay. Analytical Biochemistry, 1987, 161, 132-139.	2.4	76
38	Neural Network Analyses of Infrared Spectra for Classifying Cell Wall Architectures. Plant Physiology, 2007, 143, 1314-1326.	4.8	76
39	Structural alteration of cell wall pectins accompanies pea development in response to cold. Phytochemistry, 2014, 104, 37-47.	2.9	75
40	The intravacuolar organic matrix associated with calcium oxalate crystals in leaves of Vitis. Plant Journal, 1995, 7, 633-648.	5.7	72
41	Germin isoforms are discrete temporal markers of wheat development. Pseudogermin is a uniquely thermostable water-soluble oligomeric protein in ungerminated embryos and like germin in germinated embryos, it is incorporated into cell walls. FEBS Journal, 1992, 209, 961-969.	0.2	71
42	Dynamic changes in cell surface molecules are very early events in the differentiation of mesophyll cells from Zinnia elegans into tracheary elements. Plant Journal, 1995, 8, 891-906.	5.7	70
43	Arabinose biosynthesis is critical for salt stress tolerance in Arabidopsis. New Phytologist, 2019, 224, 274-290.	7.3	64
44	Cell wall polysaccharides from fern leaves: Evidence for a mannan-rich Type III cell wall in Adiantum raddianum. Phytochemistry, 2011, 72, 2352-2360.	2.9	63
45	Mutation of a family 8 glycosyltransferase gene alters cell wall carbohydrate composition and causes a humidity-sensitive semi-sterile dwarf phenotype in Arabidopsis. Plant Molecular Biology, 2003, 53, 687-701.	3.9	61
46	The Structure of the Catalytic Domain of a Plant Cellulose Synthase and Its Assembly into Dimers. Plant Cell, 2014, 26, 2996-3009.	6.6	61
47	Comparative Genomics in Switchgrass Using 61,585 Highâ€Quality Expressed Sequence Tags. Plant Genome, 2008, 1, .	2.8	57
48	Rhamnose-Containing Cell Wall Polymers Suppress Helical Plant Growth Independently of Microtubule Orientation. Current Biology, 2017, 27, 2248-2259.e4.	3.9	55
49	The Maize Mixed-Linkage (1â†'3),(1â†'4)-<i>Î²</i>-<scp>d</scp>-Glucan Polysaccharide Is Synthesized at the Golgi Membrane Â. Plant Physiology, 2010, 153, 1362-1371.	4.8	51
50	Genetic Determinants for Enzymatic Digestion of Lignocellulosic Biomass Are Independent of Those for Lignin Abundance in a Maize Recombinant Inbred Population. Plant Physiology, 2014, 165, 1475-1487.	4.8	51
51	Redesigning plant cell walls for the biomass-based bioeconomy. Journal of Biological Chemistry, 2020, 295, 15144-15157.	3.4	48
52	A highly substituted glucuronoarabinoxylan from developing maize coleoptiles. Carbohydrate Research, 1986, 146, 129-140.	2.3	47
53	Ripening-induced chemical modifications of papaya pectin inhibit cancer cell proliferation. Scientific Reports, 2017, 7, 16564.	3.3	47
54	Incorporation of Proline and Aromatic Amino Acids into Cell Walls of Maize Coleoptiles. Plant Physiology, 1986, 80, 660-666.	4.8	46

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55	The <i>thanatos</i> mutation in <i>Arabidopsis thaliana </i>cellulose synthase 3 (<i>AtCesA3</i>) has a dominantâ€negative effect on cellulose synthesis and plant growth. New Phytologist, 2009, 184, 114-126.	7.3	45
56	Fine structure of a mixed-oligomer storage xyloglucan from seeds of Hymenaea courbaril. Carbohydrate Polymers, 2006, 66, 444-454.	10.2	43
57	Topology of the Maize Mixed Linkage (1â†’3),(1â†’4)-Î²-D-Glucan Synthase at the Golgi Membrane. Plant Physiology, 2004, 134, 758-768.	4.8	42
58	Protection of Cellulose Synthesis in Detached Cotton Fibers by Polyethylene Glycol. Plant Physiology, 1980, 66, 911-916.	4.8	39
59	Title is missing!. Plant and Soil, 2002, 247, 71-80.	3.7	39
60	Insight into multi-site mechanisms of glycosyl transfer in (1â†’4)Î²-d-glycans provided by the cereal mixed-linkage (1â†’3),(1â†’4)Î²-d-glucan synthase. Phytochemistry, 2001, 57, 1045-1053.	2.9	37
61	Overcoming cellulose recalcitrance in woody biomass for the lignin-first biorefinery. Biotechnology for Biofuels, 2019, 12, 171.	6.2	37
62	Glycome and Proteome Components of Golgi Membranes Are Common between Two Angiosperms with Distinct Cell-Wall Structures. Plant Cell, 2019, 31, 1094-1112.	6.6	35
63	Migration and proliferation of cancer cells in culture are differentially affected by molecular size of modified citrus pectin. Carbohydrate Polymers, 2019, 211, 141-151.	10.2	33
64	Sphingomonas cynarae sp. nov., a proteobacterium that produces an unusual type of sphingan. International Journal of Systematic and Evolutionary Microbiology, 2013, 63, 72-79.	1.7	30
65	Cell Wall Architecture of the Elongating Maize Coleoptile. Plant Physiology, 2001, 127, 551-565.	4.8	29
66	Rice Cellulose SynthaseA8 Plant-Conserved Region Is a Coiled-Coil at the Catalytic Core Entrance. Plant Physiology, 2017, 173, 482-494.	4.8	27
67	Envisioning the transition to a nextâ€generation biofuels industry in the US Midwest. Biofuels, Bioproducts and Biorefining, 2012, 6, 376-386.	3.7	26
68	Rhamnogalacturonanâ€I is a determinant of cellâ€“cell adhesion in poplar wood. Plant Biotechnology Journal, 2020, 18, 1027-1040.	8.3	24
69	Polysaccharide composition of raw and cooked chayote (Sechium edule Sw.) fruits and tuberous roots. Carbohydrate Polymers, 2015, 130, 155-165.	10.2	23
70	Characterizing visible and invisible cell wall mutant phenotypes. Journal of Experimental Botany, 2015, 66, 4145-4163.	4.8	23
71	Enhanced rates of enzymatic saccharification and catalytic synthesis of biofuel substrates in gelatinized cellulose generated by trifluoroacetic acid. Biotechnology for Biofuels, 2017, 10, 310.	6.2	23
72	Linkage structure of cell-wall polysaccharides from three duckweed species. Carbohydrate Polymers, 2019, 223, 115119.	10.2	23

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73	Evolution of the Cell Wall Gene Families of Grasses. Frontiers in Plant Science, 2019, 10, 1205.	3.6	23
74	Analysis of xyloglucans by ambient chloride attachment ionization tandem mass spectrometry. Carbohydrate Polymers, 2013, 98, 1203-1213.	10.2	21
75	Validation of PyMBMS as a High-throughput Screen for Lignin Abundance in Lignocellulosic Biomass of Grasses. Bioenergy Research, 2014, 7, 899-908.	3.9	19
76	Cell wall targeted <i>in planta</i> iron accumulation enhances biomass conversion and seed iron concentration in Arabidopsis and rice. Plant Biotechnology Journal, 2016, 14, 1998-2009.	8.3	19
77	Two banana cultivars differ in composition of potentially immunomodulatory mannan and arabinogalactan. Carbohydrate Polymers, 2017, 164, 31-41.	10.2	19
78	Growth physics and water relations of red-light-induced germination in lettuce seeds. Planta, 1981, 152, 131-136.	3.2	18
79	Maize <i>Brittle Stalk2-Like3</i>, encoding a COBRA protein, functions in cell wall formation and carbohydrate partitioning. Plant Cell, 2021, 33, 3348-3366.	6.6	17
80	Clean-up procedure for partially methylated alditol acetate derivatives of polysaccharides. Journal of Chromatography A, 1991, 587, 284-287.	3.7	16
81	Alterations in cell-wall glycosyl linkage structure of Arabidopsis murus mutants. Carbohydrate Polymers, 2012, 89, 331-339.	10.2	15
82	A benzoate-activated promoter from Aspergillus niger and regulation of its activity. Applied Microbiology and Biotechnology, 2016, 100, 5479-5489.	3.6	13
83	Lack of xyloglucan in the cell walls of the Arabidopsis <i>xxt1/xxt2</i> mutant results in specific increases in homogalacturonan and glucomannan. Plant Journal, 2022, 110, 212-227.	5.7	13
84	Promotion of hypocotyl elongation in loblolly pine (Pinus taeda L.) by indole-3-acetic acid. Physiologia Plantarum, 1982, 55, 149-154.	5.2	11
85	Tandem mass spectrometric characterization of the conversion of xylose to furfural. Biomass and Bioenergy, 2015, 74, 1-5.	5.7	10
86	Sustainable production of ammonia fertilizers from biomass. Biofuels, Bioproducts and Biorefining, 2020, 14, 725-733.	3.7	10
87	Expression profiles of cell-wall related genes vary broadly between two common maize inbreds during stem development. BMC Genomics, 2019, 20, 785.	2.8	8
88	Plants and bioenergy. Journal of Experimental Botany, 2015, 66, 4093-4095.	4.8	6
89	The Cell Wall Arabinose-Deficient <i>Arabidopsis thaliana</i> Mutant <i>murus5</i> Encodes a Defective Allele of <i>REVERSIBLY GLYCOSYLATED POLYPEPTIDE2</i>. Plant Physiology, 2016, 171, 1905-1920.	4.8	5
90	A TEMPO-catalyzed oxidationâ€“reduction method to probe surface and anhydrous crystalline-core domains of cellulose microfibril bundles. Cellulose, 2021, 28, 5305-5319.	4.9	4

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91	Cell wall polysaccharides from cell suspension cultures of the Atlantic Forest tree Rudgea jasminoides (Rubiaceae). Trees - Structure and Function, 2010, 24, 713-722.	1.9	2
92	Differential distributions of trafficking and signaling proteins of the maize ER-Golgi apparatus. Plant Signaling and Behavior, 2019, 14, 1672513.	2.4	2
93	Tailoring Plant Cell Wall Composition and Architecture for Conversion to Liquid Hydrocarbon Biofuels. , 2015, , 63-82.		2
94	COMPILE: a GWAS computational pipeline for gene discovery in complex genomes. BMC Plant Biology, 2022, 22, .	3.6	2
95	Towards Redesigning Cellulose Biosynthesis for Improved Bioenergy Feedstocks. , 2014, , 183-193.		1
96	Pectin-associated mannans and xylans play distinct roles in cell-cell adhesion in pine and poplar wood. Industrial Crops and Products, 2022, 184, 115054.	5.2	1