Markus Pauly

List of Publications by Citations

133 papers	10,934 citations	60 h-index	103 g-index
168 ext. papers	13,034 ext. citations	7.9 avg, IF	6.18 L-index

#	Paper	IF	Citations
133	Cell-wall carbohydrates and their modification as a resource for biofuels. *Plant Journal*, **2008**, 54, 559-68	6.9	602
132	An Arabidopsis gene regulatory network for secondary cell wall synthesis. *Nature*, **2015**, 517, 571-5	50.4	399
131	Integrated analysis of metabolite and transcript levels reveals the metabolic shifts that underlie tomato fruit development and highlight regulatory aspects of metabolic network behavior. *Plant Physiology*, **2006**, 142, 1380-96	6.6	361
130	Disrupting two Arabidopsis thaliana xylosyltransferase genes results in plants deficient in xyloglucan, a major primary cell wall component. *Plant Cell*, **2008**, 20, 1519-37	11.6	312
129	Molecular domains of the cellulose/xyloglucan network in the cell walls of higher plants. *Plant Journal*, **1999**, 20, 629-39	6.9	284
128	Comparative transcriptomics reveals patterns of selection in domesticated and wild tomato. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E2655-62	11.5	260
127	Overexpression of pectin methylesterase inhibitors in Arabidopsis restricts fungal infection by Botrytis cinerea. *Plant Physiology*, **2007**, 143, 1871-80	6.6	251
126	Glycosyltransferases and cell wall biosynthesis: novel players and insights. *Current Opinion in Plant Biology*, **2004**, 7, 285-95	9.9	235
125	A cascade of arabinosyltransferases controls shoot meristem size in tomato. *Nature Genetics*, **2015**, 47, 784-92	36.3	229
124	Plant cell wall polymers as precursors for biofuels. *Current Opinion in Plant Biology*, **2010**, 13, 305-12	9.9	227
123	Hemicellulose biosynthesis. *Planta*, **2013**, 238, 627-42	4.7	226
122	O-glycosylated cell wall proteins are essential in root hair growth. *Science*, **2011**, 332, 1401-3	33.3	220
121	The transcription factor WIN1/SHN1 regulates Cutin biosynthesis in Arabidopsis thaliana. *Plant Cell*, **2007**, 19, 1278-94	11.6	215
120	Hydrophilic-interaction chromatography of complex carbohydrates. *Journal of Chromatography A*, **1994**, 676, 191-22	4.5	214
119	ARABINAN DEFICIENT 1 is a putative arabinosyltransferase involved in biosynthesis of pectic arabinan in Arabidopsis. *Plant Physiology*, **2006**, 140, 49-58	6.6	210
118	Comparative deep transcriptional profiling of four developing oilseeds. *Plant Journal*, **2011**, 68, 1014-27	6.9	201
117	A xyloglucan-specific endo-beta-1,4-glucanase from Aspergillus aculeatus: expression cloning in yeast, purification and characterization of the recombinant enzyme. *Glycobiology*, **1999**, 9, 93-100	5.8	188

116	An insect herbivore microbiome with high plant biomass-degrading capacity. *PLoS Genetics*, **2010**, 6, e1001129	6.6	172
115	Rapid structural phenotyping of plant cell wall mutants by enzymatic oligosaccharide fingerprinting. *Plant Physiology*, **2002**, 130, 1754-63	6.6	171
114	Changes in cell wall polysaccharides in developing barley (Hordeum vulgare) coleoptiles. *Planta*, **2005**, 221, 729-38	4.7	158
113	Overexpression of the maize Corngrass1 microRNA prevents flowering, improves digestibility, and increases starch content of switchgrass. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 17550-5	11.5	152
112	Engineering of plant cell walls for enhanced biofuel production. *Current Opinion in Plant Biology*, **2015**, 25, 151-61	9.9	144
111	Pectin engineering: modification of potato pectin by in vivo expression of an endo-1,4-beta-D-galactanase. *Proceedings of the National Academy of Sciences of the United States of America*, **2000**, 97, 7639-44	11.5	144
110	Substitution of L-fucose by L-galactose in cell walls of Arabidopsis mur1. *Science*, **1996**, 272, 1808-10	33.3	142
109	XAX1 from glycosyltransferase family 61 mediates xylosyltransfer to rice xylan. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 17117-22	11.5	140
108	O-acetylation of plant cell wall polysaccharides. *Frontiers in Plant Science*, **2012**, 3, 12	6.2	140
107	Loss-of-function mutation of REDUCED WALL ACETYLATION2 in Arabidopsis leads to reduced cell wall acetylation and increased resistance to Botrytis cinerea. *Plant Physiology*, **2011**, 155, 1068-78	6.6	132
106	O-acetylation of Arabidopsis hemicellulose xyloglucan requires AXY4 or AXY4L, proteins with a TBL and DUF231 domain. *Plant Cell*, **2011**, 23, 4041-53	11.6	126
105	A coumaroyl-ester-3-hydroxylase insertion mutant reveals the existence of nonredundant meta-hydroxylation pathways and essential roles for phenolic precursors in cell expansion and plant growth. *Plant Physiology*, **2006**, 140, 30-48	6.6	123
104	Rice cellulose synthase-like D4 is essential for normal cell-wall biosynthesis and plant growth. *Plant Journal*, **2009**, 60, 1055-69	6.9	122
103	Biosynthesis of the Plant Cell Wall Matrix Polysaccharide Xyloglucan. *Annual Review of Plant Biology*, **2016**, 67, 235-59	30.7	122
102	Comprehensive compositional analysis of plant cell walls (lignocellulosic biomass) part II: carbohydrates. *Journal of Visualized Experiments*, **2010**,	1.6	121
101	Xylan O-acetylation impacts xylem development and enzymatic recalcitrance as indicated by the Arabidopsis mutant tbl29. *Molecular Plant*, **2013**, 6, 1373-5	14.4	120
100	RHM2 is involved in mucilage pectin synthesis and is required for the development of the seed coat in Arabidopsis. *Plant Physiology*, **2004**, 134, 286-95	6.6	113
99	Comprehensive compositional analysis of plant cell walls (Lignocellulosic biomass) part I: lignin. *Journal of Visualized Experiments*, **2010**,	1.6	107

98	Identification of plant cell wall mutants by means of a forward chemical genetic approach using hydrolases. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 14699-704	11.5	104
97	The inositol oxygenase gene family of Arabidopsis is involved in the biosynthesis of nucleotide sugar precursors for cell-wall matrix polysaccharides. *Planta*, **2005**, 221, 243-54	4.7	103
96	Identification of a xylogalacturonan xylosyltransferase involved in pectin biosynthesis in Arabidopsis. *Plant Cell*, **2008**, 20, 1289-302	11.6	100
95	The Arabidopsis root hair cell wall formation mutant lrx1 is suppressed by mutations in the RHM1 gene encoding a UDP-L-rhamnose synthase. *Plant Cell*, **2006**, 18, 1630-41	11.6	100
94	UDP-glucose 4-epimerase isoforms UGE2 and UGE4 cooperate in providing UDP-galactose for cell wall biosynthesis and growth of Arabidopsis thaliana. *Plant Cell*, **2007**, 19, 1565-79	11.6	98
93	Solution-state 2D NMR spectroscopy of plant cell walls enabled by a dimethylsulfoxide-d6/1-ethyl-3-methylimidazolium acetate solvent. *Analytical Chemistry*, **2013**, 85, 3213-21	7.8	96
92	The TUMOROUS SHOOT DEVELOPMENT2 gene of Arabidopsis encoding a putative methyltransferase is required for cell adhesion and co-ordinated plant development. *Plant Journal*, **2007**, 50, 735-50	6.9	89
91	Changes in the structure of xyloglucan during cell elongation. *Planta*, **2001**, 212, 842-50	4.7	88
90	Microanalysis of plant cell wall polysaccharides. *Molecular Plant*, **2009**, 2, 922-32	14.4	86
89	Disruption of ATCSLD5 results in reduced growth, reduced xylan and homogalacturonan synthase activity and altered xylan occurrence in Arabidopsis. *Plant Journal*, **2007**, 52, 791-802	6.9	85
88	A High-Throughput Platform for Screening Milligram Quantities of Plant Biomass for Lignocellulose Digestibility. *Bioenergy Research*, **2010**, 3, 93-102	3.1	83
87	The Golgi localized bifunctional UDP-rhamnose/UDP-galactose transporter family of Arabidopsis. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 11563-8	11.5	81
86	Pectin Biosynthesis Is Critical for Cell Wall Integrity and Immunity in Arabidopsis thaliana. *Plant Cell*, **2016**, 28, 537-56	11.6	79
85	Structural Diversity and Function of Xyloglucan Sidechain Substituents. *Plants*, **2014**, 3, 526-42	4.5	79
84	Molecular characterization of two Arabidopsis thaliana glycosyltransferase mutants, rra1 and rra2, which have a reduced residual arabinose content in a polymer tightly associated with the cellulosic wall residue. *Plant Molecular Biology*, **2007**, 64, 439-51	4.6	76
83	XTH acts at the microfibril-matrix interface during cell elongation. *Journal of Experimental Botany*, **2005**, 56, 673-83	7	75
82	O-Acetylation of plant cell wall polysaccharides: identification and partial characterization of a rhamnogalacturonan O-acetyl-transferase from potato suspension-cultured cells. *Planta*, **2000**, 210, 659-67	4.7	71
81	Arabidopsis leucine-rich repeat extensin (LRX) proteins modify cell wall composition and influence plant growth. *BMC Plant Biology*, **2015**, 15, 155	5.3	65

80	AXY8 encodes an α-fucosidase, underscoring the importance of apoplastic metabolism on the fine structure of Arabidopsis cell wall polysaccharides. *Plant Cell*, **2011**, 23, 4025-40	11.6	64
79	Monitoring Polysaccharide Dynamics in the Plant Cell Wall. *Plant Physiology*, **2018**, 176, 2590-2600	6.6	61
78	Potential role for purple acid phosphatase in the dephosphorylation of wall proteins in tobacco cells. *Plant Physiology*, **2010**, 153, 603-10	6.6	61
77	Reduced Wall Acetylation proteins play vital and distinct roles in cell wall O-acetylation in Arabidopsis. *Plant Physiology*, **2013**, 163, 1107-17	6.6	60
76	A β-glucuronosyltransferase from Arabidopsis thaliana involved in biosynthesis of type II arabinogalactan has a role in cell elongation during seedling growth. *Plant Journal*, **2013**, 76, 1016-29	6.9	60
75	RNA-Seq analysis of developing nasturtium seeds (Tropaeolum majus): identification and characterization of an additional galactosyltransferase involved in xyloglucan biosynthesis. *Molecular Plant*, **2012**, 5, 984-92	14.4	60
74	Interactions between MUR10/CesA7-dependent secondary cellulose biosynthesis and primary cell wall structure. *Plant Physiology*, **2006**, 142, 1353-63	6.6	60
73	The role of the plant-specific ALTERED XYLOGLUCAN9 protein in Arabidopsis cell wall polysaccharide O-acetylation. *Plant Physiology*, **2015**, 167, 1271-83	6.6	59
72	Deep sequencing of voodoo lily (Amorphophallus konjac): an approach to identify relevant genes involved in the synthesis of the hemicellulose glucomannan. *Planta*, **2011**, 234, 515-26	4.7	59
71	AXY3 encodes a α-xylosidase that impacts the structure and accessibility of the hemicellulose xyloglucan in Arabidopsis plant cell walls. *Planta*, **2011**, 233, 707-19	4.7	58
70	Direct interference with rhamnogalacturonan I biosynthesis in Golgi vesicles. *Plant Physiology*, **2002**, 129, 95-102	6.6	57
69	COBRA-LIKE2, a member of the glycosylphosphatidylinositol-anchored COBRA-LIKE family, plays a role in cellulose deposition in arabidopsis seed coat mucilage secretory cells. *Plant Physiology*, **2015**, 167, 711-24	6.6	55
68	Polysaccharides from grape berry cell walls. Part II. Structural characterization of the xyloglucan polysaccharides. *Carbohydrate Polymers*, **2003**, 53, 253-261	10.3	53
67	The influence of cytosolic phosphoglucomutase on photosynthetic carbohydrate metabolism. *Planta*, **2002**, 215, 1013-21	4.7	52
66	Effects of the mur1 mutation on xyloglucans produced by suspension-cultured Arabidopsis thaliana cells. *Planta*, **2001**, 214, 67-74	4.7	51
65	Two Trichome Birefringence-Like Proteins Mediate Xylan Acetylation, Which Is Essential for Leaf Blight Resistance in Rice. *Plant Physiology*, **2017**, 173, 470-481	6.6	48
64	Structural characterization of novel L-galactose-containing oligosaccharide subunits of jojoba seed xyloglucans. *Carbohydrate Research*, **1997**, 304, 11-20	2.9	48
63	Identification and Characterization of a Golgi-Localized UDP-Xylose Transporter Family from Arabidopsis. *Plant Cell*, **2015**, 27, 1218-27	11.6	46

62	The glycan substrate of the cytosolic (Pho 2) phosphorylase isozyme from Pisum sativum L.: identification, linkage analysis and subcellular localization. *Plant Journal*, **2004**, 39, 933-46	6.9	45
61	Pectin may hinder the unfolding of xyloglucan chains during cell deformation: implications of the mechanical performance of Arabidopsis hypocotyls with pectin alterations. *Molecular Plant*, **2009**, 2, 990-9	14.4	44
60	Aqueous-ammonia delignification of miscanthus followed by enzymatic hydrolysis to sugars. *Bioresource Technology*, **2013**, 135, 23-9	11	42
59	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	4.9	41
58	Identification and functional characterization of the distinct plant pectin esterases PAE8 and PAE9 and their deletion mutants. *Planta*, **2014**, 240, 1123-38	4.7	40
57	Identification and characterization of a UDP-D-glucuronate 4-epimerase in Arabidopsis. *FEBS Letters*, **2004**, 569, 327-31	3.8	39
56	The Arabidopsis Golgi-localized GDP-L-fucose transporter is required for plant development. *Nature Communications*, **2016**, 7, 12119	17.4	38
55	Functional cloning of an endo-arabinanase from Aspergillus aculeatus and its heterologous expression in A. or oryzae and tobacco. *Molecular Genetics and Genomics*, **2001**, 265, 913-21	3.1	38
54	Arabinosylation of a Yariv-precipitable cell wall polymer impacts plant growth as exemplified by the Arabidopsis glycosyltransferase mutant ray1. *Molecular Plant*, **2013**, 6, 1369-72	14.4	37
53	Quantitative trait loci analysis of primary cell wall composition in Arabidopsis. *Plant Physiology*, **2006**, 141, 1035-44	6.6	35
52	New Insights Into Wall Polysaccharide -Acetylation. *Frontiers in Plant Science*, **2018**, 9, 1210	6.2	34
51	Correction for Chuck et al., Overexpression of the maize Corngrass1 microRNA prevents flowering, improves digestibility, and increases starch content of switchgrass. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 995-995	11.5	32
50	The identification of two arabinosyltransferases from tomato reveals functional equivalency of xyloglucan side chain substituents. *Plant Physiology*, **2013**, 163, 86-94	6.6	30
49	Metabolism of xyloglucan generates xylose-deficient oligosaccharide subunits of this polysaccharide in etiolated peas. *Carbohydrate Research*, **1995**, 277, 291-311	2.9	30
48	Inhibition of UV-induced immune suppression and interleukin-10 production by plant oligosaccharides and polysaccharides. *Photochemistry and Photobiology*, **1999**, 69, 141-7	3.6	30
47	The Maize MID-COMPLEMENTING ACTIVITY Homolog CELL NUMBER REGULATOR13/NARROW ODD DWARF Coordinates Organ Growth and Tissue Patterning. *Plant Cell*, **2017**, 29, 474-490	11.6	29
46	Sequencing and functional validation of the JGI Brachypodium distachyon T-DNA collection. *Plant Journal*, **2017**, 91, 361-370	6.9	29
45	Structural Modifications of Fructans in Aloe barbadensis Miller (Aloe Vera) Grown under Water Stress. *PLoS ONE*, **2016**, 11, e0159819	3.7	28

44	The presence of fucogalactoxyloglucan and its synthesis in rice indicates conserved functional importance in plants. *Plant Physiology*, **2015**, 168, 549-60	6.6	25
43	Arabidopsis thaliana AtUTr7 encodes a golgi-localized UDP-glucose/UDP-galactose transporter that affects lateral root emergence. *Molecular Plant*, **2012**, 5, 1263-80	14.4	25
42	SHOU4 Proteins Regulate Trafficking of Cellulose Synthase Complexes to the Plasma Membrane. *Current Biology*, **2018**, 28, 3174-3182.e6	6.3	25
41	Structural characterization of chemically and enzymatically derived standard oligosaccharides isolated from partially purified tamarind xyloglucan. *Carbohydrate Polymers*, **2003**, 51, 347-356	10.3	24
40	Glucuronic Acid Moieties on Xylan Are Functionally Equivalent to O-Acetyl-Substituents. *Molecular Plant*, **2015**, 8, 1119-21	14.4	23
39	Enzymatic synthesis and purification of uridine diphospho-beta-l-arabinopyranose, a substrate for the biosynthesis of plant polysaccharides. *Analytical Biochemistry*, **2000**, 278, 69-73	3.1	23
38	Identification and evolution of a plant cell wall specific glycoprotein glycosyl transferase, ExAD. *Scientific Reports*, **2017**, 7, 45341	4.9	22
37	A DUF-246 family glycosyltransferase-like gene affects male fertility and the biosynthesis of pectic arabinogalactans. *BMC Plant Biology*, **2016**, 16, 90	5.3	22
36	OLIgo mass profiling (OLIMP) of extracellular polysaccharides. *Journal of Visualized Experiments*, **2010**,	1.6	22
35	Improved protocol for the formation of N-(p-nitrobenzyloxy)aminoalditol derivatives of oligosaccharides. *Carbohydrate Research*, **1996**, 282, 1-12	2.9	22
34	Oligosaccharide mass profiling (OLIMP) of cell wall polysaccharides by MALDI-TOF/MS. *Methods in Molecular Biology*, **2011**, 715, 43-54	1.4	21
33	Testing equality of correlation coefficients in two populations via permutation methods. *Journal of Statistical Planning and Inference*, **2012**, 142, 1396-1406	0.8	20
32	Downregulation of Maize Cinnamoyl-Coenzyme A Reductase via RNA Interference Technology Causes Brown Midrib and Improves Ammonia Fiber Expansion-Pretreated Conversion into Fermentable Sugars for Biofuels. *Crop Science*, **2012**, 52, 2687-2701	2.4	20
31	Solubilization of galactosyltransferase that synthesizes 1,4-beta-galactan side chains in pectic rhamnogalacturonan I. *Physiologia Plantarum*, **2002**, 114, 540-548	4.6	17
30	Mechanistic insights from plant heteromannan synthesis in yeast. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 522-527	11.5	17
29	Nitric-acid hydrolysis of Miscanthus giganteus to sugars fermented to bioethanol. *Biotechnology and Bioprocess Engineering*, **2015**, 20, 304-314	3.1	16
28	A Xyloglucan Backbone 6-O-Acetyltransferase from Brachypodium distachyon Modulates Xyloglucan Xylosylation. *Molecular Plant*, **2016**, 9, 615-7	14.4	15
27	A sorghum NAC gene is associated with variation in biomass properties and yield potential. *Plant Direct*, **2018**, 2, e00070	3.3	15

26	Broad spectrum developmental role of Brachypodium AUX1. *New Phytologist*, **2018**, 219, 1216-1223	9.8	14
25	Deposition of lignin in four species of Saccharum. *Scientific Reports*, **2019**, 9, 5877	4.9	13
24	The synthesis of xyloglucan, an abundant plant cell wall polysaccharide, requires CSLC function. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 20316-20324	11.5	13
23	High-throughput functional assessment of polysaccharide-active enzymes using matrix-assisted laser desorption/ionization-time-of-flight mass spectrometry as exemplified on plant cell wall polysaccharides. *Analytical Biochemistry*, **2008**, 373, 9-17	3.1	12
22	The EgMUR3 xyloglucan galactosyltransferase from Eucalyptus grandis complements the mur3 cell wall phenotype in Arabidopsis thaliana. *Tree Genetics and Genomes*, **2010**, 6, 745-756	2.1	11
21	Transcriptional co-response analysis as a tool to identify new components of the wall biosynthetic machinery. *Plant Biosystems*, **2005**, 139, 69-73	1.6	11
20	Two-Step Delignification of Miscanthus To Enhance Enzymatic Hydrolysis: Aqueous Ammonia Followed by Sodium Hydroxide and Oxidants. *Energy & Fuels*, **2014**, 28, 542-548	4.1	10
19	Inducible expression of Pisum sativum xyloglucan fucosyltransferase in the pea root cap meristem, and effects of antisense mRNA expression on root cap cell wall structural integrity. *Plant Cell Reports*, **2008**, 27, 1125-35	5.1	10
18	Preservation of the delayed-type hypersensitivity response to alloantigen by xyloglucans or oligogalacturonide does not correlate with the capacity to reject ultraviolet-induced skin tumors in mice. *Journal of Investigative Dermatology*, **2001**, 116, 62-8	4.3	10
17	Comparative genomics of pectinacetylesterases: Insight on function and biology. *Plant Signaling and Behavior*, **2015**, 10, e1055434	2.5	9
16	Growth- and stress-related defects associated with wall hypoacetylation are strigolactone-dependent. *Plant Direct*, **2018**, 2, e00062	3.3	9
15	Expression of heterologous xyloglucan xylosyltransferases in Arabidopsis to investigate their role in determining xyloglucan xylosylation substitution patterns. *Planta*, **2015**, 241, 1145-58	4.7	8
14	OrganoCat Fractionation of Empty Fruit Bunches from Palm Trees into Lignin, Sugars, and Cellulose-Enriched Pulp. *ACS Omega*, **2019**, 4, 14451-14457	3.9	7
13	Identification of an arabinopyranosyltransferase from involved in the synthesis of the hemicellulose xyloglucan. *Plant Direct*, **2018**, 2, e00046	3.3	6
12	Hemicelluloses and Cell Expansion **2006**, 57-88		6
11	Multiscale analysis of lignocellulose recalcitrance towards OrganoCat pretreatment and fractionation. *Biotechnology for Biofuels*, **2020**, 13, 155	7.8	6
10	A mixed-linkage (1,3;1,4)-β-D-glucan specific hydrolase mediates dark-triggered degradation of this plant cell wall polysaccharide. *Plant Physiology*, **2021**, 185, 1559-1573	6.6	4
9	Genetic dissection of cell wall defects and the strigolactone pathway in Arabidopsis. *Plant Direct*, **2019**, 3, e00149	3.3	3

List of Publications

8	The TaCslA12 gene expressed in the wheat grain endosperm synthesizes wheat-like mannan when expressed in yeast and Arabidopsis. *Plant Science*, **2021**, 302, 110693	5.3	3
7	Regulation of acetylation of plant cell wall components is complex and responds to external stimuli. *Plant Signaling and Behavior*, **2020**, 15, 1687185	2.5	2
6	The Suitability of Orthogonal Hosts to Study Plant Cell Wall Biosynthesis. *Plants*, **2019**, 8,	4.5	2
5	Dissection of Plant Cell Walls by High-Throughput Methods43-64		1
4	An advanced method for the release, enrichment and purification of high-quality Arabidopsis thaliana rosette leaf trichomes enables profound insights into the trichome proteome.. *Plant Methods*, **2022**, 18, 12	5.8	0
3	Microwave Assisted Pretreatment of Biomass to Enhance Enzymatic Saccharification and Direct Glucose Production.. *Frontiers in Plant Science*, **2021**, 12, 767254	6.2	0
2	Modular biosynthesis of plant hemicellulose and its impact on yeast cells. *Biotechnology for Biofuels* , **2021**, 14, 140	7.8	0
1	Dissection of Plant Cell Walls by High-Throughput Methods **2018**, 43-64		