Harry Brumer

List of Publications by Year
in descending order

112 papers	6,743 citations	61984 43 h-index	66911 78 g-index
117 all docs	117 docs citations	117 times ranked	7126 citing authors

#	Article	IF	Citations
1	A discrete genetic locus confers xyloglucan metabolism in select human gut Bacteroidetes. Nature, 2014, 506, 498-502.	27.8	400
2	Evolution, substrate specificity and subfamily classification of glycoside hydrolase family 5 (GH5). BMC Evolutionary Biology, 2012, 12, 186.	3.2	389
3	Polysaccharide Utilization Loci: Fueling Microbial Communities. Journal of Bacteriology, 2017, 199, .	2.2	354
4	A hierarchical classification of polysaccharide lyases for glycogenomics. Biochemical Journal, 2010, 432, 437-444.	3.7	282
5	The <i>XTH</i> Gene Family: An Update on Enzyme Structure, Function, and Phylogeny in Xyloglucan Remodeling. Plant Physiology, 2010, 153, 456-466.	4.8	269
6	Structural Evidence for the Evolution of Xyloglucanase Activity from Xyloglucan Endo-Transglycosylases: Biological Implications for Cell Wall Metabolism. Plant Cell, 2007, 19, 1947-1963.	6.6	234
7	Xyloglucan Endotransglycosylases Have a Function during the Formation of Secondary Cell Walls of Vascular Tissues. Plant Cell, 2002, 14, 3073-3088.	6.6	208
8	How the walls come crumbling down: recent structural biochemistry of plant polysaccharide degradation. Current Opinion in Plant Biology, 2008, 11, 338-348.	7.1	178
9	Xyloglucan Endo-transglycosylase (XET) Functions in Gelatinous Layers of Tension Wood Fibers in Poplarâ€"A Glimpse into the Mechanism of the Balancing Act of Trees. Plant and Cell Physiology, 2007, 48, 843-855.	3.1	168
10	The Devil Lies in the Details: How Variations in Polysaccharide Fine-Structure Impact the Physiology and Evolution of Gut Microbes. Journal of Molecular Biology, 2014, 426, 3851-3865.	4.2	162
11	Crystal Structures of a Poplar Xyloglucan Endotransglycosylase Reveal Details of Transglycosylation Acceptor Binding. Plant Cell, 2004, 16, 874-886.	6.6	155
12	The Penium margaritaceum Genome: Hallmarks of the Origins of Land Plants. Cell, 2020, 181, 1097-1111.e12.	28.9	153
13	Molecular Mechanism by which Prominent Human Gut Bacteroidetes Utilize Mixed-Linkage Beta-Glucans, Major Health-Promoting Cereal Polysaccharides. Cell Reports, 2017, 21, 417-430.	6.4	119
14	A subfamily roadmap of the evolutionarily diverse glycoside hydrolase family 16 (GH16). Journal of Biological Chemistry, 2019, 294, 15973-15986.	3.4	118
15	Activation of Crystalline Cellulose Surfaces through the Chemoenzymatic Modification of Xyloglucan. Journal of the American Chemical Society, 2004, 126, 5715-5721.	13.7	117
16	Xyloglucan<i>endo</i>-Transglycosylase-Mediated Xyloglucan Rearrangements in Developing Wood of Hybrid Aspen Â Â. Plant Physiology, 2011, 155, 399-413.	4.8	112
17	Biomimetic engineering of cellulose-based materials. Trends in Biotechnology, 2007, 25, 299-306.	9.3	110
18	Characterization and Three-dimensional Structures of Two Distinct Bacterial Xyloglucanases from Families GH5 and GH12. Journal of Biological Chemistry, 2007, 282, 19177-19189.	3.4	103

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19	Catalytic Mechanism of Human Î±-Galactosidase. Journal of Biological Chemistry, 2010, 285, 3625-3632.	3.4	102
20	KORRIGAN1 and its Aspen Homolog PttCel9A1 Decrease Cellulose Crystallinity in Arabidopsis Stems. Plant and Cell Physiology, 2009, 50, 1099-1115.	3.1	99
21	Xyloglucan in cellulose modification. Cellulose, 2007, 14, 625-641.	4.9	93
22	Transcriptional and Hormonal Regulation of Gravitropism of Woody Stems in<i>Populus</i>. Plant Cell, 2015, 27, tpc.15.00531.	6.6	93
23	Self-Organization of Cellulose Nanocrystals Adsorbed with Xyloglucan Oligosaccharideâˆ'Poly(ethylene glycol)âˆ'Polystyrene Triblock Copolymer. Macromolecules, 2009, 42, 5430-5432.	4.8	85
24	The Structure and Function of an Arabinan-specific Î±-1,2-Arabinofuranosidase Identified from Screening the Activities of Bacterial GH43 Glycoside Hydrolases. Journal of Biological Chemistry, 2011, 286, 15483-15495.	3.4	85
25	Crystal Structures of Clostridium thermocellum Xyloglucanase, XGH74A, Reveal the Structural Basis for Xyloglucan Recognition and Degradation. Journal of Biological Chemistry, 2006, 281, 24922-24933.	3.4	79
26	Structureâ€"function characterization reveals new catalytic diversity in the galactose oxidase and glyoxal oxidase family. Nature Communications, 2015, 6, 10197.	12.8	79
27	Learning from microbial strategies for polysaccharide degradation. Biochemical Society Transactions, 2016, 44, 94-108.	3.4	77
28	Differences in enzymic properties of five recombinant xyloglucan endotransglucosylase/hydrolase (XTH) proteins of Arabidopsis thaliana. Journal of Experimental Botany, 2011, 62, 261-271.	4.8	75
29	Structural and enzymatic characterization of a glycoside hydrolase family 31 Î±-xylosidase from <i>Cellvibrio japonicus</i> involved in xyloglucan saccharification. Biochemical Journal, 2011, 436, 567-580.	3.7	69
30	Adsorption of Xyloglucan onto Cellulose Surfaces of Different Morphologies: An Entropy-Driven Process. Biomacromolecules, 2016, 17, 2801-2811.	5.4	68
31	Group III-A<i>XTH</i>Genes of Arabidopsis Encode Predominant Xyloglucan Endohydrolases That Are Dispensable for Normal Growth Â Â Â. Plant Physiology, 2012, 161, 440-454.	4.8	63
32	A complex gene locus enables xyloglucan utilization in the model saprophyte <scp><i>C</i></scp><i>ellvibrio japonicus</i>. Molecular Microbiology, 2014, 94, 418-433.	2.5	63
33	Molecular Dissection of Xyloglucan Recognition in a Prominent Human Gut Symbiont. MBio, 2016, 7, e02134-15.	4.1	62
34	Chemoâ€enzymatic Assembly of Clickable Cellulose Surfaces via Multivalent Polysaccharides. ChemSusChem, 2012, 5, 661-665.	6.8	60
35	Identification of Asp-130 as the Catalytic Nucleophile in the Main Î±-Galactosidase from Phanerochaete chrysosporium, a Family 27 Glycosyl Hydrolase. Biochemistry, 2000, 39, 9826-9836.	2.5	58
36	Synergy between Cell Surface Glycosidases and Glycan-Binding Proteins Dictates the Utilization of Specific Beta(1,3)-Glucans by Human Gut <i>Bacteroides</i>. MBio, 2020, 11, .	4.1	58

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37	Molecular Characterization of N-glycan Degradation and Transport in Streptococcus pneumoniae and Its Contribution to Virulence. PLoS Pathogens, 2017, 13, e1006090.	4.7	57
38	Lignocellulose degradation by Phanerochaete chrysosporium: purification and characterization of the main Î±-galactosidase. Biochemical Journal, 1999, 339, 43-53.	3.7	53
39	Analysis of nasturtium <i>Tm</i>NXG1 complexes by crystallography and molecular dynamics provides detailed insight into substrate recognition by family GH16 xyloglucan <i>endo</i>â€transglycosylases and <i>endo</i>â€hydrolases. Proteins: Structure, Function and Bioinformatics, 2009, 75, 820-836.	2.6	53
40	A general, robust method for the quality control of intact proteins using LCâ€“ESI-MS. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2007, 852, 188-194.	2.3	52
41	Cellulose-Based Biosensors for Esterase Detection. Analytical Chemistry, 2016, 88, 2989-2993.	6.5	51
42	Functional and Anionic Cellulose-Interacting Polymers by Selective Chemo-Enzymatic Carboxylation of Galactose-Containing Polysaccharides. Biomacromolecules, 2012, 13, 2418-2428.	5.4	50
43	Discovery of a Fungal Copper Radical Oxidase with High Catalytic Efficiency toward 5-Hydroxymethylfurfural and Benzyl Alcohols for Bioprocessing. ACS Catalysis, 2020, 10, 3042-3058.	11.2	46
44	Structural dissection of a complex <i>Bacteroides ovatus</i> gene locus conferring xyloglucan metabolism in the human gut. Open Biology, 2016, 6, 160142.	3.6	45
45	The Podospora anserina lytic polysaccharide monooxygenase PaLPMO9H catalyzes oxidative cleavage of diverse plant cell wall matrix glycans. Biotechnology for Biofuels, 2017, 10, 63.	6.2	45
46	Communal living: glycan utilization by the human gut microbiota. Environmental Microbiology, 2021, 23, 15-35.	3.8	42
47	Structure-Function Analysis of a Broad Specificity Populus trichocarpa Endo-Î²-glucanase Reveals an Evolutionary Link between Bacterial Licheninases and Plant XTH Gene Products. Journal of Biological Chemistry, 2013, 288, 15786-15799.	3.4	41
48	Identification of the acid/base catalyst of a glycoside hydrolase family 3 (GH3) Î²-glucosidase from Aspergillus niger ASKU28. Biochimica Et Biophysica Acta - General Subjects, 2013, 1830, 2739-2749.	2.4	41
49	Comprehensive crossâ€genome survey and phylogeny of glycoside hydrolase family 16 members reveals the evolutionary origin of <scp>EG</scp>16 and <scp>XTH</scp> proteins in plant lineages. Plant Journal, 2018, 95, 1114-1128.	5.7	41
50	Synthesis, preliminary characterization, and application of novel surfactants from highly branched xyloglucan oligosaccharides. Glycobiology, 2005, 15, 437-445.	2.5	40
51	A comparative summary of expression systems for the recombinant production of galactose oxidase. Microbial Cell Factories, 2010, 9, 68.	4.0	40
52	Focused Metabolism of Î²-Glucans by the Soil <i>Bacteroidetes</i> Species Chitinophaga pinensis. Applied and Environmental Microbiology, 2019, 85, .	3.1	40
53	Structure-Function Analysis of a Mixed-linkage Î²-Glucanase/Xyloglucanase from the Key Ruminal Bacteroidetes Prevotella bryantii B14. Journal of Biological Chemistry, 2016, 291, 1175-1197.	3.4	38
54	Building Custom Polysaccharides in Vitro with an Efficient, Broad-Specificity Xyloglucan Glycosynthase and a Fucosyltransferase. Journal of the American Chemical Society, 2011, 133, 10892-10900.	13.7	37

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55	Structural Enzymology of Cellvibrio japonicus Agd31B Protein Reveals Î±-Transglucosylase Activity in Glycoside Hydrolase Family 31. Journal of Biological Chemistry, 2012, 287, 43288-43299.	3.4	36
56	Surface glycan-binding proteins are essential for cereal beta-glucan utilization by the human gut symbiont Bacteroides ovatus. Cellular and Molecular Life Sciences, 2019, 76, 4319-4340.	5.4	35
57	Proteomic insights into mannan degradation and protein secretion by the forest floor bacterium Chitinophaga pinensis. Journal of Proteomics, 2017, 156, 63-74.	2.4	34
58	Crystallographic insight into the evolutionary origins of xyloglucan endotransglycosylases and endohydrolases. Plant Journal, 2017, 89, 651-670.	5.7	33
59	Structure and Activity of Paenibacillus polymyxa Xyloglucanase from Glycoside Hydrolase Family 44. Journal of Biological Chemistry, 2011, 286, 33890-33900.	3.4	32
60	Distinguishing Xyloglucanase Activity in endo-Î²(1â†’4)glucanases. Methods in Enzymology, 2012, 510, 97-120.	1.0	32
61	Effects of temperature and glycerol and methanolâ€feeding profiles on the production of recombinant galactose oxidase in Pichia pastoris. Biotechnology Progress, 2014, 30, 728-735.	2.6	31
62	Recent structural insights into the enzymology of the ubiquitous plant cell wall glycan xyloglucan. Current Opinion in Structural Biology, 2016, 40, 43-53.	5.7	30
63	Functional and structural characterization of a potent <scp>GH</scp>74 <i>endo</i>â€xyloglucanase from the soil saprophyte <i>Cellvibrio japonicus</i> unravels the first step of xyloglucan degradation. FEBS Journal, 2016, 283, 1701-1719.	4.7	29
64	Targeted allylation and propargylation of galactose-containing polysaccharides in water. Carbohydrate Polymers, 2014, 100, 46-54.	10.2	28
65	Comprehensive Insights into the Production of Long Chain Aliphatic Aldehydes Using a Copper-Radical Alcohol Oxidase as Biocatalyst. ACS Sustainable Chemistry and Engineering, 2021, 9, 4411-4421.	6.7	28
66	Kinetic Analyses of Retaining <i>endo</i>-(Xylo)glucanases from Plant and Microbial Sources Using New Chromogenic Xylogluco-Oligosaccharide Aryl Glycosides. Biochemistry, 2008, 47, 7762-7769.	2.5	26
67	NMR Spectroscopic Analysis Reveals Extensive Binding Interactions of Complex Xyloglucan Oligosaccharides with the <i>Cellvibrio japonicus</i> Glycoside Hydrolase Family 31 Î±â€Xylosidase. Chemistry - A European Journal, 2012, 18, 13395-13404.	3.3	25
68	Substrate specificity, regiospecificity, and processivity in glycoside hydrolase family 74. Journal of Biological Chemistry, 2019, 294, 13233-13247.	3.4	25
69	Glycan utilization systems in the human gut microbiota: a gold mine for structural discoveries. Current Opinion in Structural Biology, 2021, 68, 26-40.	5.7	25
70	Growth of Chitinophaga pinensis on Plant Cell Wall Glycans and Characterisation of a Glycoside Hydrolase Family 27 Î²-l-Arabinopyranosidase Implicated in Arabinogalactan Utilisation. PLoS ONE, 2015, 10, e0139932.	2.5	24
71	In vitro and in vivo characterization of three Cellvibrio japonicus glycoside hydrolase family 5 members reveals potent xyloglucan backbone-cleaving functions. Biotechnology for Biofuels, 2018, 11, 45.	6.2	24
72	Adaptation of Syntenic Xyloglucan Utilization Loci of Human Gut <i>Bacteroidetes</i> to Polysaccharide Side Chain Diversity. Applied and Environmental Microbiology, 2019, 85, .	3.1	24

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73	Comprehensive functional characterization of the glycoside hydrolase family 3 enzymes from <i>Cellvibrio japonicus</i> reveals unique metabolic roles in biomass saccharification. Environmental Microbiology, 2017, 19, 5025-5039.	3.8	23
74	A Real-Time Fluorogenic Assay for the Visualization of Glycoside Hydrolase Activity in Planta. Plant Physiology, 2009, 151, 1741-1750.	4.8	22
75	A Cell-Surface GH9 Endo-Glucanase Coordinates with Surface Glycan-Binding Proteins to Mediate Xyloglucan Uptake in the Gut Symbiont Bacteroides ovatus. Journal of Molecular Biology, 2019, 431, 981-995.	4.2	22
76	Configured for the Human Gut Microbiota: Molecular Mechanisms of Dietary Î²-Glucan Utilization. ACS Chemical Biology, 2021, 16, 2087-2102.	3.4	22
77	Mechanistic insights into consumption of the food additive xanthan gum by the human gut microbiota. Nature Microbiology, 2022, 7, 556-569.	13.3	21
78	Determination of biocatalytic parameters of a copper radical oxidase using real-time reaction progress monitoring. Organic and Biomolecular Chemistry, 2020, 18, 2076-2084.	2.8	17
79	Distinct protein architectures mediate species-specific beta-glucan binding and metabolism in the human gut microbiota. Journal of Biological Chemistry, 2021, 296, 100415.	3.4	17
80	Xyloglucan and xyloglucan endo-transglycosylases (XET): Tools forex vivocellulose surface modification. Biocatalysis and Biotransformation, 2006, 24, 107-120.	2.0	16
81	Heterologous expression of diverse barley XTH genes in the yeast Pichia pastoris. Plant Biotechnology, 2010, 27, 251-258.	1.0	16
82	A Low-Volume, Parallel Copper-Bicinchoninic Acid (BCA) Assay for Glycoside Hydrolases. Methods in Molecular Biology, 2017, 1588, 3-14.	0.9	16
83	Structural enzymology reveals the molecular basis of substrate regiospecificity and processivity of an exemplar bacterial glycoside hydrolase family 74 endo-xyloglucanase. Biochemical Journal, 2018, 475, 3963-3978.	3.7	15
84	Four cellulose-active lytic polysaccharide monooxygenases from Cellulomonas species. Biotechnology for Biofuels, 2021, 14, 29.	6.2	15
85	A survey of substrate specificity among Auxiliary Activity Family 5 copper radical oxidasesï»¿Â. Cellular and Molecular Life Sciences, 2021, 78, 8187-8208.	5.4	15
86	Structural basis for the flexible recognition of Î±â€glucan substrates by <i>Bacteroides thetaiotaomicron</i> SusG. Protein Science, 2018, 27, 1093-1101.	7.6	14
87	Synthesis and Analysis of Specific Covalent Inhibitors of <i>endo</i>â€Xyloglucanases. ChemBioChem, 2015, 16, 575-583.	2.6	12
88	The solâ€"gel transition of ultra-low solid content TEMPO-cellulose nanofibril/mixed-linkage Î²-glucan bionanocomposite gels. Soft Matter, 2018, 14, 9393-9401.	2.7	12
89	Structural Dynamics and Catalytic Properties of a Multimodular Xanthanase. ACS Catalysis, 2018, 8, 6021-6034.	11.2	12
90	Two Fusarium copper radical oxidases with high activity on aryl alcohols. Biotechnology for Biofuels, 2021, 14, 138.	6.2	12

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91	Synthesis and application of a highly branched, mechanism-based 2-deoxy-2-fluoro-oligosaccharide inhibitor of<i>endo</i>-xyloglucanases. Organic and Biomolecular Chemistry, 2018, 16, 8732-8741.	2.8	10
92	A family AA5_2 carbohydrate oxidase from Penicillium rubens displays functional overlap across the AA5 family. PLoS ONE, 2019, 14, e0216546.	2.5	10
93	Molecular dynamics simulations of a branched tetradecasaccharide substrate in the active site of a xyloglucan<i>endo</i>-transglycosylase. Molecular Simulation, 2011, 37, 1001-1013.	2.0	9
94	Proteomic data on enzyme secretion and activity in the bacterium Chitinophaga pinensis. Data in Brief, 2017, 11, 484-490.	1.0	8
95	Quantitative Kinetic Characterization of Glycoside Hydrolases Using High-Performance Anion-Exchange Chromatography (HPAEC). Methods in Molecular Biology, 2017, 1588, 15-25.	0.9	7
96	New Family of Carbohydrate-Binding Modules Defined by a Galactosyl-Binding Protein Module from a Cellvibrio japonicus Endo-Xyloglucanase. Applied and Environmental Microbiology, 2021, 87, e0263420.	3.1	7
97	N-Glycan Degradation Pathways in Gut- and Soil-Dwelling Actinobacteria Share Common Core Genes. ACS Chemical Biology, 2021, 16, 701-711.	3.4	6
98	Orthogonal Active-Site Labels for Mixed-Linkage endo-Î²-Glucanases. ACS Chemical Biology, 2021, 16, 1968-1984.	3.4	6
99	Assignment of selectively 13C-labeled cellopentaose synthesized using an engineered glycosynthase. Journal of Biomolecular NMR, 2001, 21, 67-68.	2.8	5
100	Conservation of endo-glucanase 16 (EG16) activity across highly divergent plant lineages. Biochemical Journal, 2021, 478, 3063-3078.	3.7	5
101	Controlled sulfation of mixed-linkage glucan by Response Surface Methodology for the development of biologically applicable polysaccharides. Carbohydrate Polymers, 2021, 269, 118275.	10.2	5
102	Cell Surface Xyloglucan Recognition and Hydrolysis by the Human Gut Commensal Bacteroides uniformis. Applied and Environmental Microbiology, 2022, 88, AEM0156621.	3.1	5
103	Oxidative enzyme activation of cellulose substrates for surface modification. Green Chemistry, 2022, 24, 4026-4040.	9.0	5
104	Organic acids and glucose prime late-stage fungal biotrophy in maize. Science, 2022, 376, 1187-1191.	12.6	5
105	Glycoside Hydrolase Activities in Cell Walls of Sclerenchyma Cells in the Inflorescence Stems of Arabidopsis thaliana Visualized in Situ. Plants, 2014, 3, 513-525.	3.5	2
106	Controlled sulfation of poly(vinyl alcohol) for biological and technical applications using response surface methodology. Molecular Systems Design and Engineering, 2020, 5, 1671-1678.	3.4	2
107	Bulky paper with good strength and smoothness? Certainly!. Nordic Pulp and Paper Research Journal, 2014, 29, 725-731.	0.7	1
108	An improved preparation of some aryl Î±-<scp>l</scp>-arabinofuranosides for use as chromogenic substrates for Î±-<scp>l</scp>-arabinofuranosidases. Canadian Journal of Chemistry, 2015, 93, 1176-1180.	1.1	1

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109	<i>Physcomitrium (Physcomitrella) patens</i> Endoâ€glucanase 16 is Involved in the Cell Wall Development of Young Tissue. Physiologia Plantarum, 2022, , e13683.	5.2	1
110	Sticking to starch. Journal of Biological Chemistry, 2022, 298, 102049.	3.4	1
111	Chitin-Active Lytic Polysaccharide Monooxygenases Are Rare in <i>Cellulomonas</i> Species. Applied and Environmental Microbiology, 2022, 88, .	3.1	1
112	Editorial overview: Carbohydrateâ€"protein interactions: The future is taking shape. Current Opinion in Structural Biology, 2014, 28, v-vii.	5.7	0