

Glycosyltransferase structural biology and its role in the glycosylation

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Citation Report

#	ARTICLE	IF	CITATIONS
1	Complete set of glycosyltransferase structures in the calicheamicin biosynthetic pathway reveals the origin of regioselectivity. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 17649-17654.	3.3	47
2	Synthesis and enzymatic evaluation of ketose phosphonates: the interplay between mutarotation, monofluorination and acidity. Chemical Science, 2012, 3, 1866.	3.7	33
3	Structural Investigation of the Thermostability and Product Specificity of Amylosucrase from the Bacterium Deinococcus geothermalis. Journal of Biological Chemistry, 2012, 287, 6642-6654.	1.6	55
4	Natural Product Disaccharide Engineering through Tandem Glycosyltransferase Catalysis Reversibility and Neoglycosylation. Organic Letters, 2012, 14, 5086-5089.	2.4	34
5	Pseudouridine Monophosphate Glycosidase: A New Glycosidase Mechanism. Biochemistry, 2012, 51, 9245-9255.	1.2	28
6	The structural biology of enzymes involved in natural product glycosylation. Natural Product Reports, 2012, 29, 1201.	5.2	99
7	Enzymatic glycosylation of multivalent scaffolds. Chemical Society Reviews, 2013, 42, 4774.	18.7	64
8	Recent development of phosphorylases possessing large potential for oligosaccharide synthesis. Current Opinion in Chemical Biology, 2013, 17, 301-309.	2.8	122
9	Enzymatic glycosylation of terpenoids. Phytochemistry Reviews, 2013, 12, 327-339.	3.1	37
10	C.Âlegans DPY-19 Is a C-Mannosyltransferase Glycosylating Thrombospondin Repeats. Molecular Cell, 2013, 50, 295-302.	4.5	106
11	Engineered Biosynthesis of Disaccharide-Modified Polyene Macrolides. Applied and Environmental Microbiology, 2013, 79, 6156-6159.	1.4	15
12	A surprising sweetener from enteropathogenic <i>Escherichia coli</i> . Gut Microbes, 2014, 5, 766-769.	4.3	6
13	Crystal structures of sialyltransferase from <i>Photobacterium damsela</i> . FEBS Letters, 2014, 588, 4720-4729.	1.3	21
14	Crossroads between Bacterial and Mammalian Glycosyltransferases. Frontiers in Immunology, 2014, 5, 492.	2.2	53
15	The C-glycosyltransferase IroB from pathogenic <i>Escherichia coli</i> : Identification of residues required for efficient catalysis. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2014, 1844, 1619-1630.	1.1	19
17	Mechanism of the effect of glycosyltransferase GLT8D2 on fatty liver. Lipids in Health and Disease, 2015, 14, 43.	1.2	15
19	Probing the Catalytic Promiscuity of a Regio- and Stereospecific C-glycosyltransferase from <i>Mangifera indica</i> . Angewandte Chemie - International Edition, 2015, 54, 12678-12682.	7.2	96
20	Biochemical characterization of a novel bifunctional glycosyl-1-phosphate transferase involved in the exopolysaccharide biosynthesis. Biochemical and Biophysical Research Communications, 2015, 465, 113-118.	1.0	5

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21	Distinct Substrate Specificity and Catalytic Activity of the Pseudoglycosyltransferase VldE. <i>Chemistry and Biology</i> , 2015, 22, 724-733.	6.2	10
22	In a glycosylation reaction how does a hydroxylic nucleophile find the activated anomeric carbon?. <i>Carbohydrate Research</i> , 2015, 403, 69-89.	1.1	17
23	Loop dynamics of thymidine diphosphate-rhamnose 3- <i>O</i> -methyltransferase (CalS11), an enzyme in calicheamicin biosynthesis. <i>Structural Dynamics</i> , 2016, 3, 012004.	0.9	5
24	Asparagus IRX9, IRX10, and IRX14A Are Components of an Active Xylan Backbone Synthase Complex that Forms in the Golgi Apparatus. <i>Plant Physiology</i> , 2016, 171, 93-109.	2.3	75
25	Microbial production of next-generation stevia sweeteners. <i>Microbial Cell Factories</i> , 2016, 15, 207.	1.9	96
26	Recent developments in the enzymatic O-glycosylation of flavonoids. <i>Applied Microbiology and Biotechnology</i> , 2016, 100, 4269-4281.	1.7	76
27	Recent progress in the enzymatic glycosylation of phenolic compounds. <i>Journal of Carbohydrate Chemistry</i> , 2016, 35, 1-23.	0.4	47
28	UGT74B1 from <i>Arabidopsis thaliana</i> as a versatile biocatalyst for the synthesis of desulfoglycosinolates. <i>Organic and Biomolecular Chemistry</i> , 2016, 14, 6252-6261.	1.5	9
29	Exploring human glycosylation for better therapies. <i>Molecular Aspects of Medicine</i> , 2016, 51, 125-143.	2.7	19
30	Plant secondary metabolism linked glycosyltransferases: An update on expanding knowledge and scopes. <i>Biotechnology Advances</i> , 2016, 34, 714-739.	6.0	157
31	Evaluation of an amino acid residue critical for the specificity and activity of human Gb3/CD77 synthase. <i>Glycoconjugate Journal</i> , 2016, 33, 963-973.	1.4	11
32	Nucleoside Diphosphate Sugar Analogues that Target Glycosyltransferases. <i>Asian Journal of Organic Chemistry</i> , 2016, 5, 1413-1427.	1.3	5
33	Glycosyltransferase engineering for carbohydrate synthesis. <i>Biochemical Society Transactions</i> , 2016, 44, 129-142.	1.6	60
34	Synthesis of Amino- <i>N</i> -Nucleoside Conjugates. <i>Asian Journal of Organic Chemistry</i> , 2016, 5, 1525-1534.	1.3	2
35	Genome-wide identification and characterization of macrolide glycosyltransferases from a marine-derived <i>Bacillus</i> strain and their phylogenetic distribution. <i>Environmental Microbiology</i> , 2016, 18, 4770-4781.	1.8	13
36	De novo biosynthesis of Gastrodin in <i>Escherichia coli</i> . <i>Metabolic Engineering</i> , 2016, 35, 138-147.	3.6	80
37	One-pot multienzyme (OPME) systems for chemoenzymatic synthesis of carbohydrates. <i>Organic and Biomolecular Chemistry</i> , 2016, 14, 2809-2818.	1.5	126
38	Epithelial cell detachment by <i>Porphyromonas gingivalis</i> biofilm and planktonic cultures. <i>Biofouling</i> , 2016, 32, 489-496.	0.8	3

#	ARTICLE	IF	CITATIONS
39	Identification, Recombinant Expression, and Biochemical Analysis of Putative Secondary Product Glucosyltransferases from <i>Citrus paradisi</i> . Journal of Agricultural and Food Chemistry, 2016, 64, 1957-1969.	2.4	18
40	6-O-Nucleotidyltransferase: an aminoglycoside-modifying enzyme specific for streptomycin/streptidine. MedChemComm, 2016, 7, 177-183.	3.5	2
41	Monomerization alters the dynamics of the lid region in <i>Campylobacter jejuni</i> CstII: an MD simulation study. Journal of Biomolecular Structure and Dynamics, 2016, 34, 778-791.	2.0	41
42	Enzymatic N-Glycosylation of Diverse Arylamine Aglycones by a Promiscuous Glycosyltransferase from <i>Carthamus tinctorius</i> . Advanced Synthesis and Catalysis, 2017, 359, 603-608.	2.1	25
43	OleD Loki as a Catalyst for Tertiary Amine and Hydroxamate Glycosylation. ChemBioChem, 2017, 18, 363-367.	1.3	4
44	Analysis of plant UDP-arabinopyranose mutase (UAM): Role of divalent metals and structure prediction. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2017, 1865, 510-519.	1.1	5
45	Two Novel Fungal Phenolic UDP Glycosyltransferases from <i>Absidia coerulea</i> and <i>Rhizopus japonicus</i> . Applied and Environmental Microbiology, 2017, 83, .	1.4	19
46	Complete tetraglycosylation of a calix[4]arene by a chemo-enzymatic approach. Organic and Biomolecular Chemistry, 2017, 15, 10064-10072.	1.5	2
47	Enzymatic synthesis of Î±-flavone glucoside via regioselective transglucosylation by amylosucrase from <i>Deinococcus geothermalis</i> . PLoS ONE, 2018, 13, e0207466.	1.1	24
48	The LPG1x family from <i>Leishmania major</i> is constituted of rare eukaryotic galactofuranosyltransferases with unprecedented catalytic properties. Scientific Reports, 2018, 8, 17566.	1.6	4
49	Comparative genomics of HORMA domain-containing proteins in prokaryotes and eukaryotes. Cell Cycle, 2018, 17, 2531-2546.	1.3	2
50	New contributions for industrial n-butanol fermentation: An optimized <i>Clostridium</i> strain and the use of xylooligosaccharides as a fermentation additive. Biomass and Bioenergy, 2018, 119, 304-313.	2.9	7
51	Leloir Glycosyltransferases as Biocatalysts for Chemical Production. ACS Catalysis, 2018, 8, 6283-6300.	5.5	133
52	Methylglucosylation of aromatic amino and phenolic moieties of drug-like biosynthons by combinatorial biosynthesis. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E4980-E4989.	3.3	40
53	Toward Automated Enzymatic Synthesis of Oligosaccharides. Chemical Reviews, 2018, 118, 8151-8187.	23.0	153
54	Diversity of O-Glycosyltransferases Contributes to the Biosynthesis of Flavonoid and Triterpenoid Glycosides in <i>Glycyrrhiza uralensis</i> . ACS Synthetic Biology, 2019, 8, 1858-1866.	1.9	43
55	Semirational design and engineering of grapevine glucosyltransferases for enhanced activity and modified product selectivity. Glycobiology, 2019, 29, 765-775.	1.3	10
56	S-glycosyltransferase UGT74B1 can glycosylate both S- and O-acceptors: mechanistic insights through substrate specificity. Molecular Catalysis, 2019, 479, 110631.	1.0	7

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57	Mo1719 " Association Between Hepatitis C Virus Infection and Gastric Cancer: A Nationwide Population-Based Cohort Study in Taiwan. <i>Gastroenterology</i> , 2019, 156, S-820.	0.6	0
58	Leloir Glycosyltransferases in Applied Biocatalysis: A Multidisciplinary Approach. <i>International Journal of Molecular Sciences</i> , 2019, 20, 5263.	1.8	63
59	Group A, B, C, and G <i>Streptococcus</i> Lancefield antigen biosynthesis is initiated by a conserved β -D-GlcNAc-1,4-l-rhamnosyltransferase. <i>Journal of Biological Chemistry</i> , 2019, 294, 15237-15256.	1.6	25
60	Oligosaccharide Synthesis and Translational Innovation. <i>Journal of the American Chemical Society</i> , 2019, 141, 3735-3754.	6.6	129
61	Ca ²⁺ assisted glycosylation of phenolic compounds by phenolic-UDP-glycosyltransferase from <i>Bacillus subtilis</i> PI18. <i>International Journal of Biological Macromolecules</i> , 2019, 135, 373-378.	3.6	5
62	Molecular basis for branched steviol glucoside biosynthesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 13131-13136.	3.3	41
63	Phylogeny-guided characterization of glycosyltransferases for epothilone glycosylation. <i>Microbial Biotechnology</i> , 2019, 12, 763-774.	2.0	12
64	Triterpenoid-biosynthetic UDP-glycosyltransferases from plants. <i>Biotechnology Advances</i> , 2019, 37, 107394.	6.0	114
65	Complex Structure of <i>Pseudomonas aeruginosa</i> Arginine Rhamnosyltransferase EarP with Its Acceptor Elongation Factor P. <i>Journal of Bacteriology</i> , 2019, 201, .	1.0	16
66	Harnessing glycoenzyme engineering for synthesis of bioactive oligosaccharides. <i>Interface Focus</i> , 2019, 9, 20180069.	1.5	37
67	Enzymatic <i>O</i> -Glycosylation of Etoposide Aglycone by Exploration of the Substrate Promiscuity for Glycosyltransferases. <i>ACS Synthetic Biology</i> , 2019, 8, 2718-2725.	1.9	6
68	OleD Loki as a Catalyst for Hydroxamate Glycosylation. <i>ChemBioChem</i> , 2020, 21, 952-957.	1.3	4
69	Enzymatic Synthesis of Glycans and Glycoconjugates. <i>Advances in Biochemical Engineering/Biotechnology</i> , 2020, 175, 231-280.	0.6	11
70	Bacterial sialyltransferases and their use in biocatalytic cascades for sialo-oligosaccharide production. <i>Biotechnology Advances</i> , 2020, 44, 107613.	6.0	24
71	Synthetic Carbohydrate Chemistry and Translational Medicine. <i>Journal of Organic Chemistry</i> , 2020, 85, 15780-15800.	1.7	21
72	The schizophrenia risk locus in SLC39A8 alters brain metal transport and plasma glycosylation. <i>Scientific Reports</i> , 2020, 10, 13162.	1.6	43
73	GLT25D2 Is Critical for Inflammatory Immune Response to Promote Acetaminophen-Induced Hepatotoxicity by Autophagy Pathway. <i>Frontiers in Pharmacology</i> , 2020, 11, 01187.	1.6	3
74	Glycobiology and schizophrenia: a biological hypothesis emerging from genomic research. <i>Molecular Psychiatry</i> , 2020, 25, 3129-3139.	4.1	46

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75	Advances on the in vivo and in vitro glycosylations of flavonoids. <i>Applied Microbiology and Biotechnology</i> , 2020, 104, 6587-6600.	1.7	51
76	Glycosyltransferase GT1 family: Phylogenetic distribution, substrates coverage, and representative structural features. <i>Computational and Structural Biotechnology Journal</i> , 2020, 18, 1383-1390.	1.9	59
77	Round, round we go – strategies for enzymatic cofactor regeneration. <i>Natural Product Reports</i> , 2020, 37, 1316-1333.	5.2	115
78	Genome-wide analyses reveals a glucosyltransferase involved in rutin and emodin glucoside biosynthesis in tartary buckwheat. <i>Food Chemistry</i> , 2020, 318, 126478.	4.2	21
79	Structure and mechanism of the ER-based glucosyltransferase ALG6. <i>Nature</i> , 2020, 579, 443-447.	13.7	52
80	Flavonoids, terpenoids, and polyketide antibiotics: Role of glycosylation and biocatalytic tactics in engineering glycosylation. <i>Biotechnology Advances</i> , 2020, 41, 107550.	6.0	50
81	Identification and Modeling of a GT-A Fold in the Î±-Dystroglycan Glycosylating Enzyme LARGE1. <i>Journal of Chemical Information and Modeling</i> , 2020, 60, 3145-3156.	2.5	10
82	Structural and biochemical studies of the glycosyltransferase Bs-YjiC from <i>Bacillus subtilis</i> . <i>International Journal of Biological Macromolecules</i> , 2021, 166, 806-817.	3.6	16
83	Structures and mechanism of human glycosyltransferase Î²1,3-N-acetylglucosaminyltransferase 2 (B3GNT2), an important player in immune homeostasis. <i>Journal of Biological Chemistry</i> , 2021, 296, 100042.	1.6	14
84	Structure–function relationship of terpenoid glycosyltransferases from plants. <i>Natural Product Reports</i> , 2022, 39, 389-409.	5.2	30
85	A breakthrough in protein engineering of a glycosyltransferase. <i>Green Synthesis and Catalysis</i> , 2021, 2, 4-5.	3.7	9
86	Cell-based high-throughput screening of polysaccharide biosynthesis hosts. <i>Microbial Cell Factories</i> , 2021, 20, 62.	1.9	3
87	ECM2 and GLT8D2 in human pulmonary artery hypertension: fruits from weighted gene co-expression network analysis. <i>Journal of Thoracic Disease</i> , 2021, 13, 2242-2254.	0.6	14
88	Side Chain Conformation Restriction in the Catalysis of Glycosidic Bond Formation by Leloir Glycosyltransferases, Glycoside Phosphorylases, and Transglycosidases. <i>ACS Catalysis</i> , 2021, 11, 5069-5078.	5.5	9
89	Probing the determinants of the transglycosylation/hydrolysis partition in a retaining Î±-l-arabinofuranosidase. <i>New Biotechnology</i> , 2021, 62, 68-78.	2.4	12
92	High glycosyltransferase domain containing two protein levels contribute to poor prognosis in urothelial carcinoma. <i>International Journal of Urology</i> , 2021, 28, 1178-1187.	0.5	0
93	Mapping the glycosyltransferase fold landscape using interpretable deep learning. <i>Nature Communications</i> , 2021, 12, 5656.	5.8	22
94	Biosynthesis of Bacterial Polysaccharides. , 2021, , 143-178.		1

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95	Recent Progress in Structural Studies on the GT-C Superfamily of Protein Glycosyltransferases. <i>Sub-Cellular Biochemistry</i> , 2021, 96, 259-271.	1.0	7
97	Biosynthesis and Biological Activity of Carbasugars. <i>International Journal of Carbohydrate Chemistry</i> , 2016, 2016, 1-42.	1.5	23
98	Glycosyltransferases and non-alcoholic fatty liver disease. <i>World Journal of Gastroenterology</i> , 2016, 22, 2483.	1.4	17
99	Structural basis for SdgB- and SdgA-mediated glycosylation of staphylococcal adhesive proteins. <i>Acta Crystallographica Section D: Structural Biology</i> , 2021, 77, 1460-1474.	1.1	1
102	Biosynthesis of a rosavin natural product in <i>Escherichia coli</i> by glycosyltransferase rational design and artificial pathway construction. <i>Metabolic Engineering</i> , 2022, 69, 15-25.	3.6	12
103	Biocatalytic Alkylation Chemistry: Building Molecular Complexity with High Selectivity. <i>ChemPlusChem</i> , 2022, 87, .	1.3	10
104	Midecamycin Is Inactivated by Several Different Sugar Moieties at Its Inactivation Site. <i>International Journal of Molecular Sciences</i> , 2021, 22, 12636.	1.8	2
105	Docking-guided rational engineering of a macrolide glycosyltransferase glycodiversifies epothilone B. <i>Communications Biology</i> , 2022, 5, 100.	2.0	6
106	Crystal structure and catalytic mechanism of the MbnBC holoenzyme required for methanobactin biosynthesis. <i>Cell Research</i> , 2022, 32, 302-314.	5.7	18
107	A highly versatile fungal glucosyltransferase for specific production of quercetin-7-O- β -D-glucoside and quercetin-3-O- β -D-glucoside in different hosts. <i>Applied Microbiology and Biotechnology</i> , 2022, 106, 227-245.	1.7	11
108	Genetics Behind the Glycosylation Patterns in the Biosynthesis of Dalbaheptides. <i>Frontiers in Chemistry</i> , 2022, 10, 858708.	1.8	3
109	The schizophrenia-associated variant in SLC39A8 alters protein glycosylation in the mouse brain. <i>Molecular Psychiatry</i> , 2022, 27, 1405-1415.	4.1	11
110	Ligand-Induced Conformational and Dynamical Changes in a GT-B Glycosyltransferase: Molecular Dynamics Simulations of Heptosyltransferase I Complexes. <i>Journal of Chemical Information and Modeling</i> , 2022, 62, 324-339.	2.5	8
111	Xyloglucan Biosynthesis: From Genes to Proteins and Their Functions. <i>Frontiers in Plant Science</i> , 2022, 13, .	1.7	15
112	Elucidation of the O-antigen structure of <i>Escherichia coli</i> O93 and characterization of its biosynthetic genes. <i>Glycobiology</i> , 2023, 33, 289-300.	1.3	1
113	Enzymatic cascade reactions for the efficient synthesis of natural products. <i>Tetrahedron</i> , 2022, 127, 133099.	1.0	3
114	Structure function relationships in plant UDP-glycosyltransferases. <i>Industrial Crops and Products</i> , 2022, 189, 115784.	2.5	10
115	Controlled processivity in glycosyltransferases: A way to expand the enzymatic toolbox. <i>Biotechnology Advances</i> , 2023, 63, 108081.	6.0	5

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116	Screening UDP-Glycosyltransferases for Effectively Transforming Stevia Glycosides: Enzymatic Synthesis of Glucosylated Derivatives of Rubusoside. <i>Journal of Agricultural and Food Chemistry</i> , 2022, 70, 15178-15188.	2.4	3
117	Subfunctionalization of a monoglignol to a phytoalexin glucosyltransferase is accompanied by substrate inhibition. <i>Plant Communications</i> , 2022, , 100506.	3.6	3
118	Biocatalytic Approaches to Building Blocks for Enzymatic and Chemical Glycan Synthesis. <i>Jacs Au</i> , 2023, 3, 47-61.	3.6	6
119	Salidroside Alleviates Diabetic Cognitive Dysfunction Via B3galt2/F3/Contactin Signaling Pathway in Mice. <i>Neuroscience</i> , 2023, 512, 47-58.	1.1	2
120	Giant Viruses as a Source of Novel Enzymes for Biotechnological Application. <i>Pathogens</i> , 2022, 11, 1453.	1.2	4
121	Structural basis for heparan sulfate co-polymerase action by the EXT1–2 complex. <i>Nature Chemical Biology</i> , 2023, 19, 565-574.	3.9	13
122	UDP-Glycosyltransferases in Edible Fungi: Function, Structure, and Catalytic Mechanism. <i>Fermentation</i> , 2023, 9, 164.	1.4	8
123	Comparative structural analysis of plant uridine diphosphate (UDP)-dependent glycosyltransferases (UGTs) in plant specialized metabolism: structures of plant UGTs for biosynthesis of steviol glycosides. <i>Phytochemistry Reviews</i> , 2023, 22, 385-406.	3.1	1
124	Rethinking Biosynthesis of Aclacinomycin A. <i>Molecules</i> , 2023, 28, 2761.	1.7	1
125	Structure and dynamics of the Arabidopsis O-fucosyltransferase SPINDLY. <i>Nature Communications</i> , 2023, 14, .	5.8	5