Tom Rj Desmet

List of Publications by Year
in descending order

121 papers	3,083 citations	136950 32 h-index	214800 47 g-index
129 all docs	129 docs citations	129 times ranked	3103 citing authors

#	Article	IF	Citations
1	Enzymatic Glycosylation of Small Molecules: Challenging Substrates Require Tailored Catalysts. Chemistry - A European Journal, 2012, 18, 10786-10801.	3.3	183
2	Enzymes for the biocatalytic production of rare sugars. Journal of Industrial Microbiology and Biotechnology, 2012, 39, 823-834.	3.0	157
3	Sucrose synthase: A unique glycosyltransferase for biocatalytic glycosylation process development. Biotechnology Advances, 2016, 34, 88-111.	11.7	141
4	Towards a carbon-negative sustainable bio-based economy. Frontiers in Plant Science, 2013, 4, 174.	3.6	114
5	Creating lactose phosphorylase enzymes by directed evolution of cellobiose phosphorylase. Protein Engineering, Design and Selection, 2009, 22, 393-399.	2.1	69
6	Enzymatic glycosyl transfer: mechanisms and applications. Biocatalysis and Biotransformation, 2011, 29, 1-18.	2.0	67
7	Recombinant Expression of Trichoderma reesei Cel61A in Pichia pastoris: Optimizing Yield and N-terminal Processing. Molecular Biotechnology, 2015, 57, 1010-1017.	2.4	57
8	UDP-hexose 4-epimerases: a view on structure, mechanism andÂsubstrate specificity. Carbohydrate Research, 2015, 414, 8-14.	2.3	55
9	Increasing the thermostability of sucrose phosphorylase by a combination of sequence- and structure-based mutagenesis. Protein Engineering, Design and Selection, 2011, 24, 829-834.	2.1	53
10	A hydrophobic platform as a mechanistically relevant transition state stabilising factor appears to be present in the active centre of all glycoside hydrolases. FEBS Letters, 2003, 538, 1-7.	2.8	51
11	Transglucosylation potential of six sucrose phosphorylases toward different classes of acceptors. Carbohydrate Research, 2011, 346, 1860-1867.	2.3	51
12	Identification of sucrose synthase in nonphotosynthetic bacteria and characterization of the recombinant enzymes. Applied Microbiology and Biotechnology, 2015, 99, 8465-8474.	3.6	51
13	Sucrose Phosphorylase and Related Enzymes in Glycoside Hydrolase Family 13: Discovery, Application and Engineering. International Journal of Molecular Sciences, 2020, 21, 2526.	4.1	50
14	Structural Features on the Substrate-Binding Surface of Fungal Lytic Polysaccharide Monooxygenases Determine Their Oxidative Regioselectivity. Biotechnology Journal, 2019, 14, 1800211.	3.5	48
15	An investigation of the substrate specificity of the xyloglucanase Cel74A from Hypocrea jecorina. FEBS Journal, 2007, 274, 356-363.	4.7	47
16	Evaluation of (4-aminobutyloxy)quinolines as a novel class of antifungal agents. Bioorganic and Medicinal Chemistry Letters, 2013, 23, 4641-4643.	2.2	47
17	Screening of recombinant glycosyltransferases reveals the broad acceptor specificity of stevia UGT-76G1. Journal of Biotechnology, 2016, 233, 49-55.	3.8	43
18	A structural classification of carbohydrate epimerases: From mechanistic insights to practical applications. Biotechnology Advances, 2015, 33, 1814-1828.	11.7	42

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19	Increasing the thermostability of sucrose phosphorylase by multipoint covalent immobilization. Journal of Biotechnology, 2010, 150, 125-130.	3.8	41
20	Enzymatic Glycosylation of Phenolic Antioxidants: Phosphorylase-Mediated Synthesis and Characterization. Journal of Agricultural and Food Chemistry, 2015, 63, 10131-10139.	5.2	41
21	Biocatalytic Synthesis of the Rare Sugar Kojibiose: Process Scale-Up and Application Testing. Journal of Agricultural and Food Chemistry, 2017, 65, 6030-6041.	5.2	40
22	Ionic liquids as cosolvents for glycosylation by sucrose phosphorylase: balancing acceptor solubility and enzyme stability. Green Chemistry, 2013, 15, 1949.	9.0	39
23	Sucrose phosphorylase as crossâ€linked enzyme aggregate: Improved thermal stability for industrial applications. Biotechnology Journal, 2010, 5, 1192-1197.	3.5	37
24	Collision cross section prediction of deprotonated phenolics in a travelling-wave ion mobility spectrometer using molecular descriptors and chemometrics. Analytica Chimica Acta, 2016, 924, 68-76.	5.4	37
25	Development and application of a screening assay for glycoside phosphorylases. Analytical Biochemistry, 2010, 401, 162-167.	2.4	36
26	Converting bulk sugars into prebiotics: semi-rational design of a transglucosylase with controlled selectivity. Chemical Communications, 2016, 52, 3687-3689.	4.1	36
27	Glycosyltransferase cascades for natural product glycosylation: Use of plant instead of bacterial sucrose synthases improves the UDPâ€glucose recycling from sucrose and UDP. Biotechnology Journal, 2017, 12, 1600557.	3.5	36
28	Creating Space for Large Acceptors: Rational Biocatalyst Design for Resveratrol Glycosylation in an Aqueous System. Angewandte Chemie - International Edition, 2015, 54, 9289-9292.	13.8	35
29	Operational stability of immobilized sucrose phosphorylase: Continuous production of Î±-glucose-1-phosphate at elevated temperatures. Process Biochemistry, 2011, 46, 2074-2078.	3.7	33
30	A constitutive expression system for highâ€throughput screening. Engineering in Life Sciences, 2011, 11, 10-19.	3.6	33
31	An Imprinted Cross-Linked Enzyme Aggregate (iCLEA) of Sucrose Phosphorylase: Combining Improved Stability with Altered Specificity. International Journal of Molecular Sciences, 2012, 13, 11333-11342.	4.1	33
32	Trehalose Analogues: Latest Insights in Properties and Biocatalytic Production. International Journal of Molecular Sciences, 2015, 16, 13729-13745.	4.1	33
33	Crystal Complex Structures Reveal How Substrate is Bound in the â˜'4 to the +2 Binding Sites of Humicola grisea Cel12A. Journal of Molecular Biology, 2004, 342, 1505-1517.	4.2	32
34	The quest for a thermostable sucrose phosphorylase reveals sucrose 6â€²-phosphate phosphorylase as a novel specificity. Applied Microbiology and Biotechnology, 2014, 98, 7027-7037.	3.6	32
35	Evaluation of automated nano-electrospray mass spectrometry in the determination of non-covalent protein-ligand complexes. Rapid Communications in Mass Spectrometry, 2004, 18, 3061-3067.	1.5	31
36	Chemoenzymatic synthesis of Î±-l-rhamnosides using recombinant Î±-l-rhamnosidase from Aspergillus terreus. Bioresource Technology, 2013, 147, 640-644.	9.6	31

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37	Construction of cellobiose phosphorylase variants with broadened acceptor specificity towards anomerically substituted glucosides. Biotechnology and Bioengineering, 2010, 107, 413-420.	3.3	29
38	Disulfide bridges as essential elements for the thermostability of lytic polysaccharide monooxygenase LPMO10C from Streptomyces coelicolor. Protein Engineering, Design and Selection, 2017, 30, 401-408.	2.1	29
39	Broadening the synthetic potential of disaccharide phosphorylases through enzyme engineering. Process Biochemistry, 2012, 47, 11-17.	3.7	28
40	Synthesis of benzothiophene-based hydroxamic acids as potent and selective HDAC6 inhibitors. Chemical Communications, 2015, 51, 9868-9871.	4.1	28
41	Synthesis of Potent and Selective HDAC6 Inhibitors Bearing a Cyclohexaneâ€•or Cycloheptaneâ€Annulated 1,5â€Benzothiazepine Scaffold. Chemistry - A European Journal, 2017, 23, 128-136.	3.3	28
42	Potent and selective HDAC6 inhibitory activity of N-(4-hydroxycarbamoylbenzyl)-1,2,4,9-tetrahydro-3-thia-9-azafluorenes as novel sulfur analogues of Tubastatin A. Chemical Communications, 2013, 49, 3775.	4.1	27
43	Synthesis of functionalized 3-, 5-, 6- and 8-aminoquinolines via intermediate (3-pyrrolin-1-yl)- and (2-oxopyrrolidin-1-yl)quinolines and evaluation of their antiplasmodial and antifungal activity. European Journal of Medicinal Chemistry, 2015, 92, 91-102.	5.5	27
44	Mapping the acceptor site of sucrose phosphorylase from Bifidobacterium adolescentis by alanine scanning. Journal of Molecular Catalysis B: Enzymatic, 2013, 96, 81-88.	1.8	26
45	A quantitative indicator diagram for lytic polysaccharide monooxygenases reveals the role of aromatic surface residues in HjLPMO9A regioselectivity. PLoS ONE, 2017, 12, e0178446.	2.5	26
46	Rational design of an improved transglucosylase for production of the rare sugar nigerose. Chemical Communications, 2019, 55, 4531-4533.	4.1	26
47	Enzymatic production of Î²â€‹<scp>D</scp>â€glucoseâ€1â€phosphate from trehalose. Biotechnology Journal, 2010, 5, 986-993.	3.5	25
48	Glucosylglycerate Phosphorylase, an Enzyme with Novel Specificity Involved in Compatible Solute Metabolism. Applied and Environmental Microbiology, 2017, 83, .	3.1	25
49	Consensus engineering of sucrose phosphorylase: The outcome reflects the sequence input. Biotechnology and Bioengineering, 2013, 110, 2563-2572.	3.3	24
50	Itineraries of enzymatically and non-enzymatically catalyzed substitutions at O-glycopyranosidic bonds. Arkivoc, 2006, 2006, 90-116.	0.5	23
51	Crystallization and X-ray diffraction studies of cellobiose phosphorylase from<i>Cellulomonas uda</i>. Acta Crystallographica Section F: Structural Biology Communications, 2010, 66, 346-351.	0.7	22
52	Synthesis of Novel Azaâ€aromatic Curcuminoids with Improved Biological Activities towards Various Cancer Cell Lines. ChemistryOpen, 2018, 7, 381-392.	1.9	22
53	Biocatalytic production of novel glycolipids with cellodextrin phosphorylase. Bioresource Technology, 2012, 115, 84-87.	9.6	21
54	Biphasic Catalysis with Disaccharide Phosphorylases: Chemoenzymatic Synthesis of Î±-d-Glucosides Using Sucrose Phosphorylase. Organic Process Research and Development, 2014, 18, 781-787.	2.7	21

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55	Synthesis and SAR assessment of novel Tubathian analogs in the pursuit of potent and selective HDAC6 inhibitors. Organic and Biomolecular Chemistry, 2016, 14, 2537-2549.	2.8	21
56	Enzymatic Properties and Substrate Specificity of the Trehalose Phosphorylase from Caldanaerobacter subterraneus. Applied and Environmental Microbiology, 2011, 77, 6939-6944.	3.1	20
57	Thermostable alpha-glucan phosphorylases: characteristics and industrial applications. Applied Microbiology and Biotechnology, 2018, 102, 8187-8202.	3.6	20
58	Enzymatic production of Î±-d-galactose 1-phosphate by lactose phosphorolysis. Biotechnology Letters, 2009, 31, 1873-1877.	2.2	19
59	Synthesis of halogenated 4-quinolones and evaluation of their antiplasmodial activity. Bioorganic and Medicinal Chemistry Letters, 2014, 24, 1214-1217.	2.2	19
60	Probing the active site of cellodextrin phosphorylase from <i>Clostridium stercorarium</i>: Kinetic characterization, ligand docking, and siteâ€directed mutagenesis. Biotechnology Progress, 2011, 27, 326-332.	2.6	17
61	Exploring the sequence diversity in glycoside hydrolase family 13_18 reveals a novel glucosylglycerol phosphorylase. Applied Microbiology and Biotechnology, 2018, 102, 3183-3191.	3.6	17
62	Converting Galactose into the Rare Sugar Talose with Cellobiose 2-Epimerase as Biocatalyst. Molecules, 2018, 23, 2519.	3.8	17
63	Structure-function relationships in NDP-sugar active SDR enzymes: Fingerprints for functional annotation and enzyme engineering. Biotechnology Advances, 2021, 48, 107705.	11.7	17
64	Insertions and deletions in protein evolution and engineering. Biotechnology Advances, 2022, 60, 108010.	11.7	17
65	Engineering of cellobiose phosphorylase for glycoside synthesis. Journal of Biotechnology, 2011, 156, 253-260.	3.8	15
66	Engineering the acceptor specificity of trehalose phosphorylase for the production of trehalose analogs. Biotechnology Progress, 2012, 28, 1257-1262.	2.6	15
67	Engineering of cellobiose phosphorylase for the defined synthesis of cellotriose. Applied Microbiology and Biotechnology, 2020, 104, 8327-8337.	3.6	15
68	Engineering the carbohydrate-binding site of Epa1p from Candida glabrata: generation of adhesin mutants with different carbohydrate specificity. Glycobiology, 2014, 24, 1312-1322.	2.5	14
69	Synthesis and Applications of 3â€Methyleneâ€4â€(trifluoromethyl)azetidinâ€2â€ones as Building Blocks for the Preparation of Monoâ€and Spirocyclic 4â€CF₃â€Î²â€Lactams. Asian Journal of Organic Chemistry, 2016, 5, 1480-1491.	2.7	14
70	Characterization of the First Bacterial and Thermostable GDP-Mannose 3,5-Epimerase. International Journal of Molecular Sciences, 2019, 20, 3530.	4.1	14
71	Uncovering a superfamily of nickel-dependent hydroxyacid racemases and epimerases. Scientific Reports, 2020, 10, 18123.	3.3	14
72	Stereo-electronic control of reaction selectivity in short-chain dehydrogenases: Decarboxylation, epimerization, and dehydration. Current Opinion in Chemical Biology, 2021, 61, 43-52.	6.1	14

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73	Characterization and mutational analysis of the UDP-Glc(NAc) 4-epimerase from Marinithermus hydrothermalis. Applied Microbiology and Biotechnology, 2013, 97, 7733-7740.	3.6	13
74	Synthesis of 2-aryl-3-(2-cyanoethyl)aziridines and their chemical and enzymatic hydrolysis towards Î³-lactams and Î³-lactones. Organic and Biomolecular Chemistry, 2015, 13, 2716-2725.	2.8	13
75	Synthesis and Antimicrobial/Cytotoxic Assessment of Ferrocenyl Oxazinanes, Oxazinan-2-ones, and Tetrahydropyrimidin-2-ones. Synlett, 2015, 26, 1195-1200.	1.8	13
76	The â€œepimerringâ€• highlights the potential of carbohydrate epimerases for rare sugar production. Biocatalysis and Biotransformation, 2017, 35, 230-237.	2.0	13
77	Effects of Thymol and Thymol Î±-D-Glucopyranoside on Intestinal Function and Microbiota of Weaned Pigs. Animals, 2020, 10, 329.	2.3	13
78	CorNet: Assigning function to networks of co-evolving residues by automated literature mining. PLoS ONE, 2017, 12, e0176427.	2.5	12
79	Synthesis of Nonâ€Symmetrical Nitrogenâ€Containing Curcuminoids in the Pursuit of New Anticancer Candidates. ChemistryOpen, 2019, 8, 236-247.	1.9	12
80	Correlated positions in protein evolution and engineering. Journal of Industrial Microbiology and Biotechnology, 2017, 44, 687-695.	3.0	11
81	Chemoenzymatic Approach toward the Synthesis of 3-<i>O</i>-(Î±/Î²)-Glucosylated 3-Hydroxy-Î²-lactams. ACS Omega, 2018, 3, 15235-15245.	3.5	11
82	Oral Microbiota Display Profound Differential Metabolic Kinetics and Community Shifts upon Incubation with Sucrose, Trehalose, Kojibiose, and Xylitol. Applied and Environmental Microbiology, 2020, 86, .	3.1	11
83	Engineering the specificity of trehalose phosphorylase as a general strategy for the production of glycosyl phosphates. Chemical Communications, 2014, 50, 7834-7836.	4.1	10
84	Diastereoselective synthesis of 3-acetoxy-4-(3-aryloxiran-2-yl)azetidin-2-ones and their transformation into 3,4-oxolane-fused bicyclic Î²-lactams. Organic and Biomolecular Chemistry, 2016, 14, 11279-11288.	2.8	10
85	Structural Comparison of a Promiscuous and a Highly Specific Sucrose 6F-Phosphate Phosphorylase. International Journal of Molecular Sciences, 2019, 20, 3906.	4.1	10
86	Î²-Glucan phosphorylases in carbohydrate synthesis. Applied Microbiology and Biotechnology, 2021, 105, 4073-4087.	3.6	10
87	Enzymatic Synthesis of Phloretin Î±â€Glucosides Using a Sucrose Phosphorylase Mutant and its Effect on Solubility, Antioxidant Properties and Skin Absorption. Advanced Synthesis and Catalysis, 2021, 363, 3079-3089.	4.3	10
88	Engineering of a Thermostable Biocatalyst for the Synthesis of 2â€<i>O</i>â€Glucosylglycerol. ChemBioChem, 2021, 22, 2777-2782.	2.6	9
89	GDP-Mannose 3,5-Epimerase: A View on Structure, Mechanism, and Industrial Potential. Frontiers in Molecular Biosciences, 2021, 8, 784142.	3.5	9
90	Nucleotide sugar dehydratases: Structure, mechanism, substrate specificity, and application potential. Journal of Biological Chemistry, 2022, 298, 101809.	3.4	9

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91	Adsorptionâ€"desorption of trehalose analogues from a bioconversion mixture using activated carbon. Separation and Purification Technology, 2012, 96, 161-167.	7.9	8
92	Synthesis of 2-aminomethyl-4-phenyl-1-azabicyclo[2.2.1]heptanes via LiAlH4-induced reductive cyclization of 2-(4-chloro-2-cyano-2-phenylbutyl)aziridines and evaluation of their antimalarial activity. Bioorganic and Medicinal Chemistry Letters, 2013, 23, 1507-1510.	2.2	8
93	Sequence determinants of nucleotide binding in Sucrose Synthase: improving the affinity of a bacterial Sucrose Synthase for UDP by introducing plant residues. Protein Engineering, Design and Selection, 2017, 30, 141-148.	2.1	8
94	Identification of mercaptoacetamide-based HDAC6 inhibitors <i>via</i> a lean inhibitor strategy: screening, synthesis, and biological evaluation. Chemical Communications, 2022, 58, 6239-6242.	4.1	8
95	Chemoenzymatic Synthesis of Î²â€‹<scp>D</scp>â€Glucosides using Cellobiose Phosphorylase from <i>Clostridium thermocellum</i>. Advanced Synthesis and Catalysis, 2015, 357, 1961-1969.	4.3	7
96	A nitrilase-mediated entry to 4-carboxymethyl-Î²-lactams from chemically prepared 4-(cyanomethyl)azetidin-2-ones. RSC Advances, 2016, 6, 54573-54579.	3.6	7
97	Evolution of Phosphorylases from <i>N</i>-Acetylglucosaminide Hydrolases in Family GH3. ACS Catalysis, 2021, 11, 6225-6233.	11.2	7
98	Novel tools for the study of class I Î±-mannosidases: a chromogenic substrate and a substrate-analog inhibitor. Analytical Biochemistry, 2002, 307, 361-367.	2.4	6
99	Synthesis of piperidin-4-ones starting from 2-(2-bromo-1,1-dimethylethyl)azetidines and 2-(2-mesyloxyethyl)azetidines through a ring expansionâ€"oxidation protocol. Tetrahedron, 2013, 69, 2603-2607.	1.9	6
100	Synthesis of Novel Nitroxoline Analogs with Potent Cathepsin B Exopeptidase Inhibitory Activity. ChemMedChem, 2020, 15, 2477-2490.	3.2	6
101	Determinants of the Nucleotide Specificity in the Carbohydrate Epimerase Family 1. Biotechnology Journal, 2020, 15, e2000132.	3.5	6
102	Exploration of GH94 Sequence Space for Enzyme Discovery Reveals a Novel Glucosylgalactose Phosphorylase Specificity. ChemBioChem, 2021, 22, 3319-3325.	2.6	6
103	Discovery of a Kojibiose Hydrolase by Analysis of Specificity-Determining Correlated Positions in Glycoside Hydrolase Family 65. Molecules, 2021, 26, 6321.	3.8	6
104	Characterization of Î²-galactoside phosphorylases with diverging acceptor specificities. Enzyme and Microbial Technology, 2011, 49, 59-65.	3.2	5
105	GDP-altrose as novel product of GDP-mannose 3,5-epimerase: Revisiting its reaction mechanism. International Journal of Biological Macromolecules, 2020, 165, 1862-1868.	7.5	5
106	Synthesis, trehalase hydrolytic resistance and inhibition properties of 4- and 6-substituted trehalose derivatives. Journal of Enzyme Inhibition and Medicinal Chemistry, 2020, 35, 1964-1989.	5.2	5
107	Fate of Thymol and Its Monoglucosides in the Gastrointestinal Tract of Piglets. ACS Omega, 2020, 5, 5241-5248.	3.5	5
108	Expanding the Enzyme Repertoire for Sugar Nucleotide Epimerization: the CDP-Tyvelose 2-Epimerase from Thermodesulfatator atlanticus for Glucose/Mannose Interconversion. Applied and Environmental Microbiology, 2021, 87, .	3.1	5

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109	Metabolism and Health Effects of Rare Sugars in a CACO-2/HepG2 Coculture Model. Nutrients, 2022, 14, 611.	4.1	5
110	Modulation of activity by Arg407: structure of a fungal Î±-1,2-mannosidase in complex with a substrate analogue. Acta Crystallographica Section D: Biological Crystallography, 2008, 64, 227-236.	2.5	4
111	Assessment of the trifluoromethyl ketone functionality as an alternative zinc-binding group for selective HDAC6 inhibition. MedChemComm, 2018, 9, 1011-1016.	3.4	4
112	A GH13 glycoside phosphorylase with unknown substrate specificity from <i>Corallococcus coralloides</i>. Amylase, 2019, 3, 32-40.	1.6	4
113	Novel Insights into the Existence of the Putative UDP-Glucuronate 5-Epimerase Specificity. Catalysts, 2020, 10, 222.	3.5	4
114	Analysis of the substrate specificity of Î±-L-arabinofuranosidases by DNA sequencer-aided fluorophore-assisted carbohydrate electrophoresis. Applied Microbiology and Biotechnology, 2018, 102, 10091-10102.	3.6	3
115	High Throughput Calorimetry for Evaluating Enzymatic Reactions Generating Phosphate. Combinatorial Chemistry and High Throughput Screening, 2010, 13, 331-336.	1.1	2
116	Sweet Biotechnology: Enzymatic Production and Digestibility Screening of Novel Kojibiose and Nigerose Analogues. Journal of Agricultural and Food Chemistry, 2022, 70, 3502-3511.	5.2	2
117	Synthesis and Evaluation of 2-Deoxy-2-amino-Î²-cellobiosides as Cellulase Inhibitors. Journal of Carbohydrate Chemistry, 2010, 29, 164-180.	1.1	1
118	Microbial Enzymes for Glycoside Synthesis. , 2017, , 405-431.		1
119	Synthesis of Indolineâ€Based Benzhydroxamic Acids as Potential HDAC6 Inhibitors. ChemistrySelect, 2019, 4, 12308-12312.	1.5	1
120	Weaning affects the glycosidase activity towards phenolic glycosides in the gut of piglets. Journal of Animal Physiology and Animal Nutrition, 2020, 104, 1432-1443.	2.2	1
121	Editorial: Biocatalytic opportunities to harness the structural diversity of carbohydrates. Current Opinion in Chemical Biology, 2021, 61, A1-A3.	6.1	0