Chris Whitfield

List of Publications by Year
in descending order

98 papers	12,136 citations	47006 47 h-index	40979 93 g-index
186 all docs	186 docs citations	186 times ranked	10597 citing authors

#	Article	IF	Citations
1	Lipopolysaccharide Endotoxins. Annual Review of Biochemistry, 2002, 71, 635-700.	11.1	3,873
2	Biosynthesis and Assembly of Capsular Polysaccharides inEscherichia coli. Annual Review of Biochemistry, 2006, 75, 39-68.	11.1	883
3	Biosynthesis and Export of Bacterial Lipopolysaccharides. Annual Review of Biochemistry, 2014, 83, 99-128.	11.1	565
4	Structure, assembly and regulation of expression of capsules in <i>Escherichia coli</i>. Molecular Microbiology, 1999, 31, 1307-1319.	2.5	481
5	Molecular basis for structural diversity in the core regions of the lipopolysaccharides ofEscherichia coliandSalmonella enterica. Molecular Microbiology, 1998, 30, 221-232.	2.5	339
6	Wza the translocon for E. coli capsular polysaccharides defines a new class of membrane protein. Nature, 2006, 444, 226-229.	27.8	321
7	Pentamidine sensitizes Gram-negative pathogens to antibiotics and overcomes acquired colistin resistance. Nature Microbiology, 2017, 2, 17028.	13.3	256
8	Pivotal Roles of the Outer Membrane Polysaccharide Export and Polysaccharide Copolymerase Protein Families in Export of Extracellular Polysaccharides in Gram-Negative Bacteria. Microbiology and Molecular Biology Reviews, 2009, 73, 155-177.	6.6	249
9	Structure, biosynthesis, and function of bacterial capsular polysaccharides synthesized by ABC transporter-dependent pathways. Carbohydrate Research, 2013, 378, 35-44.	2.3	183
10	Phosphorylation of Wzc, a Tyrosine Autokinase, Is Essential for Assembly of Group 1 Capsular Polysaccharides in Escherichia coli. Journal of Biological Chemistry, 2001, 276, 2361-2371.	3.4	173
11	ABC Transporters Involved in Export of Cell Surface Glycoconjugates. Microbiology and Molecular Biology Reviews, 2010, 74, 341-362.	6.6	172
12	Modulation of the surface architecture of Gramâ€negative bacteria by the action of surface polymer:lipid Aâ€“core ligase and by determinants of polymer chain length. Molecular Microbiology, 1997, 23, 629-638.	2.5	146
13	Structures of Lipopolysaccharides from Klebsiella pneumoniae. Journal of Biological Chemistry, 2002, 277, 25070-25081.	3.4	146
14	A Novel Pathway for O-Polysaccharide Biosynthesis in Salmonella enterica Serovar Borreze. Journal of Biological Chemistry, 1996, 271, 28581-28592.	3.4	143
15	Synthesis of lipopolysaccharide O-antigens by ABC transporter-dependent pathways. Carbohydrate Research, 2012, 356, 12-24.	2.3	142
16	Assembly of Bacterial Capsular Polysaccharides and Exopolysaccharides. Annual Review of Microbiology, 2020, 74, 521-543.	7.3	141
17	The 3D structure of a periplasm-spanning platform required for assembly of group 1 capsular polysaccharides in Escherichia coli. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 2390-2395.	7.1	139
18	UDP-galactopyranose mutase has a novel structure and mechanism. Nature Structural Biology, 2001, 8, 858-863.	9.7	138

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19	Gene products required for surface expression of the capsular form of the group 1 K antigen in <i>Escherichia coli</i> (O9a:K30). Molecular Microbiology, 1999, 31, 1321-1332.	2.5	136
20	Biosynthesis and assembly of Group 1 capsular polysaccharides in Escherichia coli and related extracellular polysaccharides in other bacteria. Carbohydrate Research, 2003, 338, 2491-2502.	2.3	124
21	UDP-galactofuranose Precursor Required for Formation of the Lipopolysaccharide O Antigen of Klebsiella pneumoniae Serotype O1 Is Synthesized by the Product of the rfbDKPO1 Gene. Journal of Biological Chemistry, 1997, 272, 4121-4128.	3.4	114
22	Structure and Functional Analysis of LptC, a Conserved Membrane Protein Involved in the Lipopolysaccharide Export Pathway in Escherichia coli*. Journal of Biological Chemistry, 2010, 285, 33529-33539.	3.4	114
23	Characterization of dTDP-4-dehydrorhamnose 3,5-Epimerase and dTDP-4-dehydrorhamnose Reductase, Required for dTDP-l-rhamnose Biosynthesis in Salmonella enterica Serovar Typhimurium LT2. Journal of Biological Chemistry, 1999, 274, 25069-25077.	3.4	111
24	Conserved Organization in the <i>cps</i> Gene Clusters for Expression of <i>Escherichia coli</i> Group 1 K Antigens: Relationship to the Colanic Acid Biosynthesis Locus and the <i>cps</i> Genes from <i>Klebsiella pneumoniae</i>. Journal of Bacteriology, 1999, 181, 2307-2313.	2.2	107
25	Identification of an ATP-binding cassette transport system required for translocation of lipopolysaccharide O-antigen side-chains across the cytoplasmic membrane of Klebsiella pneumoniae serotype O1. Molecular Microbiology, 1994, 14, 505-519.	2.5	103
26	Impact of Phosphorylation of Specific Residues in the Tyrosine Autokinase, Wzc, on Its Activity in Assembly of Group 1 Capsules in<i>Escherichia coli</i>. Journal of Bacteriology, 2002, 184, 6437-6447.	2.2	100
27	Nonreducing Terminal Modifications Determine the Chain Length of Polymannose O Antigens of Escherichia coli and Couple Chain Termination to Polymer Export via an ATP-binding Cassette Transporter. Journal of Biological Chemistry, 2004, 279, 35709-35718.	3.4	100
28	KpsC and KpsS are retaining 3-deoxy- <scp>d</scp> - <i>manno</i> -oct-2-ulosonic acid (Kdo) transferases involved in synthesis of bacterial capsules. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 20753-20758.	7.1	95
29	Substrate binding by a bacterial ABC transporter involved in polysaccharide export. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 19529-19534.	7.1	94
30	Lipopolysaccharide O-antigensâ€"bacterial glycans made to measure. Journal of Biological Chemistry, 2020, 295, 10593-10609.	3.4	90
31	Conserved glycolipid termini in capsular polysaccharides synthesized by ATP-binding cassette transporter-dependent pathways in Gram-negative pathogens. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 7868-7873.	7.1	89
32	The Assembly System for the Outer Core Portion of R1- and R4-type Lipopolysaccharides of Escherichia coli. Journal of Biological Chemistry, 1998, 273, 29497-29505.	3.4	85
33	Transcriptional organization and regulation of the Escherichia coli K30 group 1 capsule biosynthesis (cps) gene cluster. Molecular Microbiology, 2003, 47, 1045-1060.	2.5	82
34	Architecture of a channel-forming O-antigen polysaccharide ABC transporter. Nature, 2018, 553, 361-365.	27.8	82
35	Functional Analysis of Conserved Gene Products Involved in Assembly of Escherichia coli Capsules and Exopolysaccharides: Evidence for Molecular Recognition between Wza and Wzc for Colanic Acid Biosynthesis. Journal of Bacteriology, 2005, 187, 5470-5481.	2.2	81
36	Translocation of Group 1 Capsular Polysaccharide in Escherichia coli Serotype K30. Journal of Biological Chemistry, 2003, 278, 49763-49772.	3.4	80

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37	A Novel Outer Membrane Protein, Wzi, Is Involved in Surface Assembly of the Escherichia coli K30 Group 1 Capsule. Journal of Bacteriology, 2003, 185, 5882-5890.	2.2	79
38	The C-terminal Domain of the Nucleotide-binding Domain Protein Wzt Determines Substrate Specificity in the ATP-binding Cassette Transporter for the Lipopolysaccharide O-antigens in Escherichia coli Serotypes O8 and O9a. Journal of Biological Chemistry, 2005, 280, 30310-30319.	3.4	79
39	Molecular and functional analysis of genes required for expression of group IB K antigens in Escherichia coli â€ƒ: characterization of the hisâ€•region containing gene clusters for multiple cellâ€surface polysaccharides. Molecular Microbiology, 1997, 26, 145-161.	2.5	76
40	Crystal Structures of Wzb of Escherichia coli and CpsB of Streptococcus pneumoniae, Representatives of Two Families of Tyrosine Phosphatases that Regulate Capsule Assembly. Journal of Molecular Biology, 2009, 392, 678-688.	4.2	69
41	Cold Stress Makes Escherichia coli Susceptible to Glycopeptide Antibiotics by Altering Outer Membrane Integrity. Cell Chemical Biology, 2016, 23, 267-277.	5.2	65
42	Biochemical and Structural Analysis of Bacterial O-antigen Chain Length Regulator Proteins Reveals a Conserved Quaternary Structure. Journal of Biological Chemistry, 2009, 284, 7395-7403.	3.4	63
43	Wzi Is an Outer Membrane Lectin that Underpins Group 1 Capsule Assembly in Escherichia coli. Structure, 2013, 21, 844-853.	3.3	63
44	Structural variation in the O-specific polysaccharides of Klebsiella pneumoniae serotype O1 and O8 lipopolysaccharide: evidence for clonal diversity in rfb genes. Molecular Microbiology, 1993, 10, 615-625.	2.5	58
45	A coiled-coil domain acts as a molecular ruler to regulate O-antigen chain length in lipopolysaccharide. Nature Structural and Molecular Biology, 2015, 22, 50-56.	8.2	55
46	Functional Analysis of the Galactosyltransferases Required for Biosynthesis of d -Galactan I, a Component of the Lipopolysaccharide O1 Antigen of Klebsiella pneumoniae. Journal of Bacteriology, 2001, 183, 3318-3327.	2.2	53
47	The Klebsiella pneumoniae O2a Antigen Defines a Second Mechanism for O Antigen ATP-binding Cassette Transporters. Journal of Biological Chemistry, 2009, 284, 2947-2956.	3.4	51
48	A plasmid-encoded rfbO:54gene cluster is required for biosynthesis of the O:54 antigen in Salmonella enterica serovar Borreze. Molecular Microbiology, 1994, 11, 437-448.	2.5	47
49	Functional Characterization of the Initiation Enzyme of S-Layer Glycoprotein Glycan Biosynthesis in Geobacillus stearothermophilus NRS 2004/3a. Journal of Bacteriology, 2007, 189, 2590-2598.	2.2	47
50	Trapped translocation intermediates establish the route for export of capsular polysaccharides across <i>Escherichia coli</i> outer membranes. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 8203-8208.	7.1	44
51	Bacterial Î²-Kdo glycosyltransferases represent a new glycosyltransferase family (GT99). Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E3120-9.	7.1	43
52	Molecular basis for the structural diversity in serogroup O2-antigen polysaccharides in Klebsiella pneumoniae. Journal of Biological Chemistry, 2018, 293, 4666-4679.	3.4	42
53	Biosynthesis of the Polymannose Lipopolysaccharide O-antigens from Escherichia coli Serotypes O8 and O9a Requires a Unique Combination of Single- and Multiple-active Site Mannosyltransferases. Journal of Biological Chemistry, 2012, 287, 35078-35091.	3.4	41
54	Lipopolysaccharide O antigen size distribution is determined by a chain extension complex of variable stoichiometry in Escherichia coli O9a. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 6407-6412.	7.1	41

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55	Coordination of Polymerization, Chain Termination, and Export in Assembly of the Escherichia coli Lipopolysaccharide O9a Antigen in an ATP-binding Cassette Transporter-dependent Pathway. Journal of Biological Chemistry, 2009, 284, 30662-30672.	3.4	40
56	Unique lipid anchor attaches Vi antigen capsule to the surface of <i>Salmonella enterica</i> serovar Typhi. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6719-6724.	7.1	37
57	In Vitro Reconstruction of the Chain Termination Reaction in Biosynthesis of the Escherichia coli O9a O-Polysaccharide. Journal of Biological Chemistry, 2011, 286, 41391-41401.	3.4	36
58	Molecular insights into the assembly and diversity of the outer core oligosaccharide in lipopolysaccharides from <I>Escherichia coli</I> and <I>Salmonella</I>. Journal of Endotoxin Research, 2003, 9, 244-249.	2.5	32
59	Domain Organization of the Polymerizing Mannosyltransferases Involved in Synthesis of the Escherichia coli O8 and O9a Lipopolysaccharide O-antigens. Journal of Biological Chemistry, 2012, 287, 38135-38149.	3.4	32
60	Glycolipid substrates for ABC transporters required for the assembly of bacterial cell-envelope and cell-surface glycoconjugates. Biochimica Et Biophysica Acta - Molecular and Cell Biology of Lipids, 2017, 1862, 1394-1403.	2.4	32
61	Dectin-2 Recognizes Mannosylated O-antigens of Human Opportunistic Pathogens and Augments Lipopolysaccharide Activation of Myeloid Cells. Journal of Biological Chemistry, 2016, 291, 17629-17638.	3.4	31
62	Single polysaccharide assembly protein that integrates polymerization, termination, and chain-length quality control. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E1215-E1223.	7.1	31
63	Full-length, Oligomeric Structure of Wzz Determined by Cryoelectron Microscopy Reveals Insights into Membrane-Bound States. Structure, 2017, 25, 806-815.e3.	3.3	31
64	Biosynthesis of a conserved glycolipid anchor for Gram-negative bacterial capsules. Nature Chemical Biology, 2019, 15, 632-640.	8.0	31
65	Functional and Structural Characterization of Polysaccharide Co-polymerase Proteins Required for Polymer Export in ATP-binding Cassette Transporter-dependent Capsule Biosynthesis Pathways. Journal of Biological Chemistry, 2011, 286, 16658-16668.	3.4	29
66	Structure of <scp>WbdD</scp>: a bifunctional kinase and methyltransferase that regulates the chain length of the <scp>O</scp> antigen in <i><scp>E</scp>scherichia coli</i><scp>O9a</scp>. Molecular Microbiology, 2012, 86, 730-742.	2.5	29
67	Biosynthesis of a Novel 3-Deoxy-D-manno-oct-2-ulosonic Acid-containing Outer Core Oligosaccharide in the Lipopolysaccharide of Klebsiella pneumoniae. Journal of Biological Chemistry, 2004, 279, 27928-27940.	3.4	28
68	Peptidoglycan Association of Murein Lipoprotein Is Required for KpsD-Dependent Group 2 Capsular Polysaccharide Expression and Serum Resistance in a Uropathogenic <i>Escherichia coli</i> Isolate. MBio, 2017, 8, .	4.1	27
69	A Membrane-located Glycosyltransferase Complex Required for Biosynthesis of the d-Galactan I Lipopolysaccharide O Antigen in Klebsiella pneumoniae. Journal of Biological Chemistry, 2010, 285, 19668-19678.	3.4	26
70	The Klebsiella pneumoniae O12 ATP-binding Cassette (ABC) Transporter Recognizes the Terminal Residue of Its O-antigen Polysaccharide Substrate. Journal of Biological Chemistry, 2016, 291, 9748-9761.	3.4	26
71	A bifunctional O-antigen polymerase structure reveals a new glycosyltransferase family. Nature Chemical Biology, 2020, 16, 450-457.	8.0	26
72	The molecular basis of regulation of bacterial capsule assembly by Wzc. Nature Communications, 2021, 12, 4349.	12.8	25

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73	Periplasmic depolymerase provides insight into ABC transporter-dependent secretion of bacterial capsular polysaccharides. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E4870-E4879.	7.1	23
74	Biochemical Characterization of Bifunctional 3-Deoxy-Î²-d-manno-oct-2-ulosonic Acid (Î²-Kdo) Transferase KpsC from Escherichia coli Involved in Capsule Biosynthesis. Journal of Biological Chemistry, 2016, 291, 21519-21530.	3.4	22
75	A widespread three-component mechanism for the periplasmic modification of bacterial glycoconjugates. Canadian Journal of Chemistry, 2016, 94, 883-893.	1.1	22
76	Bacteriophage-mediated Glucosylation Can Modify Lipopolysaccharide O-Antigens Synthesized by an ATP-binding Cassette (ABC) Transporter-dependent Assembly Mechanism. Journal of Biological Chemistry, 2015, 290, 25561-25570.	3.4	21
77	High-Throughput â€œFP-Tagâ€•Assay for the Identification of Glycosyltransferase Inhibitors. Journal of the American Chemical Society, 2019, 141, 2201-2204.	13.7	21
78	Identification of the methyl phosphate substituent at the non-reducing terminal mannose residue of the O-specific polysaccharides of Klebsiella pneumoniae O3, Hafnia alvei PCM 1223 and Escherichia coli O9/O9a LPS. Carbohydrate Research, 2012, 347, 186-188.	2.3	20
79	Klebsiella pneumoniae O1 and O2ac antigens provide prototypes for an unusual strategy for polysaccharide antigen diversification. Journal of Biological Chemistry, 2019, 294, 10863-10876.	3.4	20
80	Periplasmic export machines for outer membrane assembly. Current Opinion in Structural Biology, 2008, 18, 466-474.	5.7	19
81	Domain Interactions Control Complex Formation and Polymerase Specificity in the Biosynthesis of the Escherichia coli O9a Antigen. Journal of Biological Chemistry, 2015, 290, 1075-1085.	3.4	19
82	Capsules and Extracellular Polysaccharides in Escherichia coli and Salmonella. EcoSal Plus, 2021, 9, eESP00332020.	5.4	17
83	The UDP-glucose Dehydrogenase of Escherichia coli K-12 Displays Substrate Inhibition by NAD That Is Relieved by Nucleotide Triphosphates. Journal of Biological Chemistry, 2013, 288, 23064-23074.	3.4	16
84	Glycosyltransferases Involved in Biosynthesis of the Outer Core Region of Escherichia coli Lipopolysaccharides Exhibit Broader Substrate Specificities Than Is Predicted from Lipopolysaccharide Structures. Journal of Biological Chemistry, 2007, 282, 26786-26792.	3.4	15
85	Structural and Functional Variation in Outer Membrane Polysaccharide Export (OPX) Proteins from the Two Major Capsule Assembly Pathways Present in Escherichia coli. Journal of Bacteriology, 2019, 201, .	2.2	12
86	Substrate recognition by a carbohydrate-binding module in the prototypical ABC transporter for lipopolysaccharide O-antigen from Escherichia coli O9a. Journal of Biological Chemistry, 2019, 294, 14978-14990.	3.4	9
87	Editorial: The many wonders of the bacterial cell surface. FEMS Microbiology Reviews, 2016, 40, 161-163.	8.6	8
88	Structural Insight into a Novel Formyltransferase and Evolution to a Nonribosomal Peptide Synthetase Tailoring Domain. ACS Chemical Biology, 2018, 13, 3161-3172.	3.4	8
89	Bioinformatics analysis of diversity in bacterial glycan chain-termination chemistry and organization of carbohydrate-binding modules linked to ABC transporters. Glycobiology, 2019, 29, 822-838.	2.5	5
90	Analysis of the Topology and Active-Site Residues of WbbF, a Putative O-Polysaccharide Synthase from Salmonella enterica Serovar Borreze. Journal of Bacteriology, 2020, 202, .	2.2	5

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91	Lipopolysaccharides (Endotoxins). , 2019, , .		4
92	Investigation of core machinery for biosynthesis of Vi antigen capsular polysaccharides in Gram-negative bacteria. Journal of Biological Chemistry, 2022, 298, 101486.	3.4	4
93	The biosynthetic origin of ribofuranose in bacterial polysaccharides. Nature Chemical Biology, 2022, 18, 530-537.	8.0	3
94	Utilization of Fluorescently Tagged Synthetic Acceptor Molecules for In Vitro Characterization of a Dual-Domain Glycosyltransferase Enzyme, KpsC, from Escherichia coli. Methods in Molecular Biology, 2019, 1954, 151-159.	0.9	1
95	Capsules and Secreted Extracellular Polysaccharides. , 2018, , 604-604.		0
96	In Vitro Characterization of a Multidomain Glycosyltransferase Using Fluorescently Tagged Synthetic Acceptors. Methods in Molecular Biology, 2019, 1954, 245-253.	0.9	0
97	Periplasmic Events in the Assembly of Bacterial Lipopolysaccharides. , 0, , 214-234.		0
98	Correction for Sande and Whitfield, â€œCapsules and Extracellular Polysaccharides in Escherichia coli and Salmonellaâ€• EcoSal Plus, 2022, 10, eesp00072022.	5.4	0