Daniel E Kahne

List of Publications by Year
in descending order

124 papers	15,865 citations	17405 63 h-index	18075 120 g-index
132 all docs	132 docs citations	132 times ranked	10638 citing authors

#	Article	IF	Citations
1	The Bacterial Cell Envelope. Cold Spring Harbor Perspectives in Biology, 2010, 2, a000414-a000414.	2.3	2,408
2	Identification of a Multicomponent Complex Required for Outer Membrane Biogenesis in Escherichia coli. Cell, 2005, 121, 235-245.	13.5	656
3	Glycosylation of unreactive substrates. Journal of the American Chemical Society, 1989, 111, 6881-6882.	6.6	485
4	SEDS proteins are a widespread family of bacterial cell wall polymerases. Nature, 2016, 537, 634-638.	13.7	448
5	Defining the roles of the periplasmic chaperones SurA, Skp, and DegP in <i>Escherichia coli</i>. Genes and Development, 2007, 21, 2473-2484.	2.7	409
6	Advances in understanding bacterial outer-membrane biogenesis. Nature Reviews Microbiology, 2006, 4, 57-66.	13.6	405
7	Vancomycin Derivatives That Inhibit Peptidoglycan Biosynthesis Without Binding D-Ala-D-Ala. Science, 1999, 284, 507-511.	6.0	337
8	Structure and Function of an Essential Component of the Outer Membrane Protein Assembly Machine. Science, 2007, 317, 961-964.	6.0	327
9	Identification of a protein complex that assembles lipopolysaccharide in the outer membrane of Escherichia coli. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 11754-11759.	3.3	322
10	Lipopolysaccharide transport and assembly at the outer membrane: the PEZ model. Nature Reviews Microbiology, 2016, 14, 337-345.	13.6	299
11	Î²-Barrel Membrane Protein Assembly by the Bam Complex. Annual Review of Biochemistry, 2011, 80, 189-210.	5.0	290
12	Chemical Conditionality. Cell, 2005, 121, 307-317.	13.5	287
13	Lipoprotein Cofactors Located in the Outer Membrane Activate Bacterial Cell Wall Polymerases. Cell, 2010, 143, 1110-1120.	13.5	286
14	YfiO stabilizes the YaeT complex and is essential for outer membrane protein assembly inEscherichiaâ€ƒcoli. Molecular Microbiology, 2006, 61, 151-164.	1.2	278
15	MurJ is the flippase of lipid-linked precursors for peptidoglycan biogenesis. Science, 2014, 345, 220-222.	6.0	278
16	On the essentiality of lipopolysaccharide to Gram-negative bacteria. Current Opinion in Microbiology, 2013, 16, 779-785.	2.3	268
17	Lipoprotein SmpA is a component of the YaeT complex that assembles outer membrane proteins in Escherichia coli. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 6400-6405.	3.3	267
18	Reconstitution of Outer Membrane Protein Assembly from Purified Components. Science, 2010, 328, 890-892.	6.0	243

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19	FtsW is a peptidoglycan polymerase that is functional only in complex with its cognate penicillin-binding protein. Nature Microbiology, 2019, 4, 587-594.	5.9	233
20	Transport of lipopolysaccharide across the cell envelope: the long road of discovery. Nature Reviews Microbiology, 2009, 7, 677-683.	13.6	232
21	Outer Membrane Biogenesis. Annual Review of Microbiology, 2017, 71, 539-556.	2.9	229
22	Identification of two inner-membrane proteins required for the transport of lipopolysaccharide to the outer membrane of <i>Escherichia coli</i>. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 5537-5542.	3.3	225
23	Characterization of the two-protein complex in <i>Escherichia coli</i> responsible for lipopolysaccharide assembly at the outer membrane. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 5363-5368.	3.3	184
24	Cytoplasmic ATP Hydrolysis Powers Transport of Lipopolysaccharide Across the Periplasm in <i>E. coli</i>. Science, 2012, 338, 1214-1217.	6.0	169
25	Better Substrates for Bacterial Transglycosylases. Journal of the American Chemical Society, 2001, 123, 3155-3156.	6.6	158
26	Tandem Action of Glycosyltransferases in the Maturation of Vancomycin and Teicoplanin Aglycones:Â Novel Glycopeptidesâ€‚â€¡. Biochemistry, 2001, 40, 4745-4755.	1.2	157
27	The complex that inserts lipopolysaccharide into the bacterial outer membrane forms a two-protein plug-and-barrel. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2486-2491.	3.3	157
28	Generalizing Glycosylation:Â Synthesis of the Blood Group Antigens Lea, Leb, and LexUsing a Standard Set of Reaction Conditions. Journal of the American Chemical Society, 1996, 118, 9239-9248.	6.6	146
29	Regulation of cell size in response to nutrient availability by fatty acid biosynthesis in <i>Escherichia coli</i>. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E2561-8.	3.3	145
30	Vancomycin analogues active against vanA-resistant strains inhibit bacterial transglycosylase without binding substrate. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 5658-5663.	3.3	142
31	Proteins Required for Lipopolysaccharide Assembly in <i>Escherichia coli</i> Form a Transenvelope Complex. Biochemistry, 2010, 49, 4565-4567.	1.2	140
32	Crystal structure of a peptidoglycan glycosyltransferase suggests a model for processive glycan chain synthesis. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 5348-5353.	3.3	135
33	Genetic Basis for Activity Differences Between Vancomycin and Glycolipid Derivatives of Vancomycin. Science, 2001, 294, 361-364.	6.0	127
34	Transpeptidase-Mediated Incorporation of <scp>d</scp>-Amino Acids into Bacterial Peptidoglycan. Journal of the American Chemical Society, 2011, 133, 10748-10751.	6.6	125
35	Lipopolysaccharide is transported to the cell surface by a membrane-to-membrane protein bridge. Science, 2018, 359, 798-801.	6.0	120
36	A central role for PBP2 in the activation of peptidoglycan polymerization by the bacterial cell elongation machinery. PLoS Genetics, 2018, 14, e1007726.	1.5	119

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37	Regulated Assembly of the Transenvelope Protein Complex Required for Lipopolysaccharide Export. Biochemistry, 2012, 51, 4800-4806.	1.2	118
38	Synthesis of Vancomycin from the Aglycon. Journal of the American Chemical Society, 1999, 121, 1237-1244.	6.6	116
39	Lipoprotein LptE is required for the assembly of LptD by the Î²-barrel assembly machine in the outer membrane of <i>Escherichia coli</i>. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2492-2497.	3.3	116
40	Structure of the peptidoglycan polymerase RodA resolved by evolutionary coupling analysis. Nature, 2018, 556, 118-121.	13.7	110
41	Structural basis of unidirectional export of lipopolysaccharide to the cell surface. Nature, 2019, 567, 550-553.	13.7	108
42	The Role of Hydrophobic Substituents in the Biological Activityof Glycopeptide Antibiotics. Journal of the American Chemical Society, 2000, 122, 12608-12609.	6.6	106
43	Inhibition of the Î²-barrel assembly machine by a peptide that binds BamD. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 2011-2016.	3.3	105
44	Structure of a nascent membrane protein as it folds on the BAM complex. Nature, 2020, 583, 473-478.	13.7	101
45	Detection of Lipid-Linked Peptidoglycan Precursors by Exploiting an Unexpected Transpeptidase Reaction. Journal of the American Chemical Society, 2014, 136, 14678-14681.	6.6	100
46	Reconstitution of Peptidoglycan Cross-Linking Leads to Improved Fluorescent Probes of Cell Wall Synthesis. Journal of the American Chemical Society, 2014, 136, 10874-10877.	6.6	99
47	Lipid II overproduction allows direct assay of transpeptidase inhibition by Î²-lactams. Nature Chemical Biology, 2017, 13, 793-798.	3.9	99
48	Nonconsecutive disulfide bond formation in an essential integral outer membrane protein. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12245-12250.	3.3	96
49	Scavenging Byproducts in the Sulfoxide Glycosylation Reaction:Â Application to the Synthesis of Ciclamycin 0. Journal of the American Chemical Society, 1999, 121, 6176-6182.	6.6	92
50	Structural coordination of polymerization and crosslinking by a SEDSâ€“bPBP peptidoglycan synthase complex. Nature Microbiology, 2020, 5, 813-820.	5.9	91
51	The Escherichia coli Lpt Transenvelope Protein Complex for Lipopolysaccharide Export Is Assembled via Conserved Structurally Homologous Domains. Journal of Bacteriology, 2013, 195, 1100-1108.	1.0	90
52	Sulfenate Intermediates in the Sulfoxide Glycosylation Reaction. Journal of the American Chemical Society, 1998, 120, 5961-5969.	6.6	89
53	Disulfide Rearrangement Triggered by Translocon Assembly Controls Lipopolysaccharide Export. Science, 2012, 337, 1665-1668.	6.0	87
54	The Direction of Glycan Chain Elongation by Peptidoglycan Glycosyltransferases. Journal of the American Chemical Society, 2007, 129, 12674-12675.	6.6	82

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55	Structural Analysis of the Contacts Anchoring Moenomycin to Peptidoglycan Glycosyltransferases and Implications for Antibiotic Design. ACS Chemical Biology, 2008, 3, 429-436.	1.6	82
56	Cell-based screen for discovering lipopolysaccharide biogenesis inhibitors. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6834-6839.	3.3	81
57	Analysis of Glycan Polymers Produced by Peptidoglycan Glycosyltransferases. Journal of Biological Chemistry, 2007, 282, 31964-31971.	1.6	78
58	Characterization of a stalled complex on the Î²-barrel assembly machine. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8717-8722.	3.3	77
59	Activation of the <i>Escherichia coli</i> Î²-barrel assembly machine (Bam) is required for essential components to interact properly with substrate. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 3487-3491.	3.3	76
60	LptE binds to and alters the physical state of LPS to catalyze its assembly at the cell surface. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9467-9472.	3.3	74
61	Probing the Barrier Function of the Outer Membrane with Chemical Conditionality. ACS Chemical Biology, 2006, 1, 385-395.	1.6	72
62	Lipoprotein Activators Stimulate <i>Escherichia coli</i> Penicillin-Binding Proteins by Different Mechanisms. Journal of the American Chemical Society, 2014, 136, 52-55.	6.6	72
63	Assembly and Maintenance of Lipids at the Bacterial Outer Membrane. Chemical Reviews, 2021, 121, 5098-5123.	23.0	72
64	A Systematic Investigation of the Synthetic Utility of Glycopeptide Glycosyltransferases. Journal of the American Chemical Society, 2005, 127, 10747-10752.	6.6	70
65	Decoupling catalytic activity from biological function of the ATPase that powers lipopolysaccharide transport. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 4982-4987.	3.3	70
66	Synthesis of Heptaprenylâˆ’Lipid IV to Analyze Peptidoglycan Glycosyltransferases. Journal of the American Chemical Society, 2007, 129, 3080-3081.	6.6	69
67	In vitro reconstitution demonstrates the cell wall ligase activity of LCP proteins. Nature Chemical Biology, 2017, 13, 396-401.	3.9	68
68	Bam Lipoproteins Assemble BamA <i>in Vitro</i>. Biochemistry, 2013, 52, 6108-6113.	1.2	66
69	The Antibiotic Novobiocin Binds and Activates the ATPase That Powers Lipopolysaccharide Transport. Journal of the American Chemical Society, 2017, 139, 17221-17224.	6.6	65
70	Identification of a Functionally Unique Family of Penicillin-Binding Proteins. Journal of the American Chemical Society, 2017, 139, 17727-17730.	6.6	63
71	Lipopolysaccharide transport to the cell surface: biosynthesis and extraction from the inner membrane. Philosophical Transactions of the Royal Society B: Biological Sciences, 2015, 370, 20150029.	1.8	59
72	Lipopolysaccharide transport to the cell surface: periplasmic transport and assembly into the outer membrane. Philosophical Transactions of the Royal Society B: Biological Sciences, 2015, 370, 20150027.	1.8	58

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73	The Mechanism of Action of Lysobactin. Journal of the American Chemical Society, 2016, 138, 100-103.	6.6	58
74	Moenomycin Resistance Mutations in <i>Staphylococcus aureus</i> Reduce Peptidoglycan Chain Length and Cause Aberrant Cell Division. ACS Chemical Biology, 2014, 9, 459-467.	1.6	54
75	Design of an Oligosaccharide Scaffold That Binds in the Minor Groove of DNA. Journal of the American Chemical Society, 2000, 122, 1883-1890.	6.6	52
76	The assembly of Î²-barrel outer membrane proteins. Current Opinion in Microbiology, 2021, 60, 16-23.	2.3	50
77	Novobiocin Enhances Polymyxin Activity by Stimulating Lipopolysaccharide Transport. Journal of the American Chemical Society, 2018, 140, 6749-6753.	6.6	49
78	Forming Cross-Linked Peptidoglycan from Synthetic Gram-Negative Lipid II. Journal of the American Chemical Society, 2013, 135, 4632-4635.	6.6	48
79	The Role of the Substrate Lipid in Processive Glycan Polymerization by the Peptidoglycan Glycosyltransferases. Journal of the American Chemical Society, 2010, 132, 48-49.	6.6	47
80	Peptidoglycan Cross-Linking Preferences of <i>Staphylococcus aureus</i> Penicillin-Binding Proteins Have Implications for Treating MRSA Infections. Journal of the American Chemical Society, 2017, 139, 9791-9794.	6.6	47
81	Substrate binding to BamD triggers a conformational change in BamA to control membrane insertion. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 2359-2364.	3.3	47
82	Tuning the Moenomycin Pharmacophore To Enable Discovery of Bacterial Cell Wall Synthesis Inhibitors. Journal of the American Chemical Society, 2013, 135, 3776-3779.	6.6	45
83	Formation of a Î²-barrel membrane protein is catalyzed by the interior surface of the assembly machine protein BamA. ELife, 2019, 8, .	2.8	45
84	Staphylococcus aureus cell growth and division are regulated by an amidase that trims peptides from uncrosslinked peptidoglycan. Nature Microbiology, 2020, 5, 291-303.	5.9	44
85	The Reconstituted <i>Escherichia coli</i> Bam Complex Catalyzes Multiple Rounds of Î²-Barrel Assembly. Biochemistry, 2011, 50, 7444-7446.	1.2	42
86	Hybrid Glycopeptide Antibiotics. Journal of the American Chemical Society, 2001, 123, 12722-12723.	6.6	41
87	Reconstruction of Vancomycin by Chemical Glycosylation of the Pseudoaglycon. Journal of the American Chemical Society, 1998, 120, 11014-11015.	6.6	40
88	Isolated Peptidoglycan Glycosyltransferases from Different Organisms Produce Different Glycan Chain Lengths. Journal of the American Chemical Society, 2008, 130, 14068-14069.	6.6	40
89	Validation of inhibitors of an ABC transporter required to transport lipopolysaccharide to the cell surface in Escherichia coli. Bioorganic and Medicinal Chemistry, 2013, 21, 4846-4851.	1.4	40
90	A Practical Method for the Stereoselective Generation of Î²-2-Deoxy Glycosyl Phosphates. Organic Letters, 2004, 6, 2873-2876.	2.4	36

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91	N-Methylimidazolium chloride-catalyzed pyrophosphate formation: Application to the synthesis of Lipid I and NDP-sugar donors. Bioorganic and Medicinal Chemistry Letters, 2011, 21, 5050-5053.	1.0	36
92	Cofactor bypass variants reveal a conformational control mechanism governing cell wall polymerase activity. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 4788-4793.	3.3	36
93	Degradation and Reconstruction of Moenomycin A and Derivatives:Â Dissecting the Function of the Isoprenoid Chain. Journal of the American Chemical Society, 2006, 128, 14012-14013.	6.6	35
94	Membrane Potential Is Required for MurJ Function. Journal of the American Chemical Society, 2018, 140, 4481-4484.	6.6	35
95	Development of an Activity Assay for Discovery of Inhibitors of Lipopolysaccharide Transport. Journal of the American Chemical Society, 2010, 132, 2518-2519.	6.6	33
96	Primer Preactivation of Peptidoglycan Polymerases. Journal of the American Chemical Society, 2011, 133, 8528-8530.	6.6	33
97	Membrane integration of an essential Î²-barrel protein prerequires burial of an extracellular loop. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2598-2603.	3.3	33
98	Modular synthesis of diphospholipid oligosaccharide fragments of the bacterial cell wall and their use to study the mechanism of moenomycin and other antibiotics. Tetrahedron, 2011, 67, 9771-9778.	1.0	32
99	Identification of Residues in the Lipopolysaccharide ABC Transporter That Coordinate ATPase Activity with Extractor Function. MBio, 2016, 7, .	1.8	32
100	The Bacterial Cell Wall: From Lipid II Flipping to Polymerization. Chemical Reviews, 2022, 122, 8884-8910.	23.0	32
101	Chemoenzymatic Formation of Novel Aminocoumarin Antibiotics by the Enzymes CouN1 and CouN7. Biochemistry, 2007, 46, 8462-8471.	1.2	29
102	Studying a Cell Division Amidase Using Defined Peptidoglycan Substrates. Journal of the American Chemical Society, 2009, 131, 18230-18231.	6.6	26
103	Substrate Preferences Establish the Order of Cell Wall Assembly in <i>Staphylococcus aureus</i>. Journal of the American Chemical Society, 2018, 140, 2442-2445.	6.6	25
104	A cluster of residues in the lipopolysaccharide exporter that selects substrate variants for transport to the outer membrane. Molecular Microbiology, 2018, 109, 541-554.	1.2	23
105	Direction of Chain Growth and Substrate Preferences of Shape, Elongation, Division, and Sporulation-Family Peptidoglycan Glycosyltransferases. Journal of the American Chemical Society, 2019, 141, 12994-12997.	6.6	23
106	A mutant Escherichia coli that attaches peptidoglycan to lipopolysaccharide and displays cell wall on its surface. ELife, 2014, 3, e05334.	2.8	23
107	A Fluorescent Probe Distinguishes between Inhibition of Early and Late Steps of Lipopolysaccharide Biogenesis in Whole Cells. ACS Chemical Biology, 2017, 12, 928-932.	1.6	22
108	Structure and reconstitution of a hydrolase complex that may release peptidoglycan from the membrane after polymerization. Nature Microbiology, 2021, 6, 34-43.	5.9	21

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109	Outer Membrane Translocon Communicates with Inner Membrane ATPase To Stop Lipopolysaccharide Transport. Journal of the American Chemical Society, 2018, 140, 12691-12694.	6.6	20
110	Chemical tools to characterize peptidoglycan synthases. Current Opinion in Chemical Biology, 2019, 53, 44-50.	2.8	20
111	Pathway-Directed Screen for Inhibitors of the Bacterial Cell Elongation Machinery. Antimicrobial Agents and Chemotherapy, 2019, 63, .	1.4	20
112	Robust Suppression of Lipopolysaccharide Deficiency in Acinetobacter baumannii by Growth in Minimal Medium. Journal of Bacteriology, 2019, 201, .	1.0	19
113	Detection of Transport Intermediates in the Peptidoglycan Flippase MurJ Identifies Residues Essential for Conformational Cycling. Journal of the American Chemical Society, 2020, 142, 5482-5486.	6.6	19
114	Antibiotic Combinations That Enable One-Step, Targeted Mutagenesis of Chromosomal Genes. ACS Infectious Diseases, 2018, 4, 1007-1018.	1.8	18
115	Combining Mutations That Inhibit Two Distinct Steps of the ATP Hydrolysis Cycle Restores Wild-Type Function in the Lipopolysaccharide Transporter and Shows that ATP Binding Triggers Transport. MBio, 2019, 10, .	1.8	17
116	Structural requirements for VanA activity of vancomycin analogues. Tetrahedron, 2002, 58, 6585-6594.	1.0	16
117	Glycosylation of glycopeptides: a comparison of chemoenzymatic and chemical methods. Tetrahedron: Asymmetry, 2005, 16, 599-603.	1.8	13
118	Simple Secondary Amines Inhibit Growth of Gram-Negative Bacteria through Highly Selective Binding to Phenylalanyl-tRNA Synthetase. Journal of the American Chemical Society, 2021, 143, 623-627.	6.6	8
119	Fine-Tuning of Ïƒ E Activation Suppresses Multiple Assembly-Defective Mutations in Escherichia coli. Journal of Bacteriology, 2019, 201, .	1.0	6
120	Genetic approaches to improve clorobiocin production in Streptomyces roseochromogenes NRRL 3504. Applied Microbiology and Biotechnology, 2022, 106, 1543-1556.	1.7	2
121	Efficient and flexible synthesis of new photoactivatable propofol analogs. Bioorganic and Medicinal Chemistry Letters, 2021, 39, 127927.	1.0	1
122	Structure of a Fragment of the Bacterial Outer Membrane Protein Assembly Machinery. FASEB Journal, 2007, 21, A41.	0.2	0
123	Development of protein microarray tools for the ex vivo profiling of Oâ€linked Nâ€acetylglucosamine transferase (OGT) substrates. FASEB Journal, 2013, 27, lb68.	0.2	0
124	Detection of Lipidâ€Linked Peptidoglycan Precursors by Exploiting an Unexpected Transpeptidase Reaction. FASEB Journal, 2015, 29, 573.11.	0.2	0