

Daniel E Kahne

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126
papers

12,315
citations

59
h-index

110
g-index

132
ext. papers

14,378
ext. citations

15.9
avg, IF

6.58
L-index

#	Paper	IF	Citations
126	The bacterial cell envelope. <i>Cold Spring Harbor Perspectives in Biology</i> , 2010 , 2, a000414	10.2	1674
125	Identification of a multicomponent complex required for outer membrane biogenesis in <i>Escherichia coli</i> . <i>Cell</i> , 2005 , 121, 235-45	56.2	565
124	Glycosylation of unreactive substrates. <i>Journal of the American Chemical Society</i> , 1989 , 111, 6881-6882	16.4	432
123	Advances in understanding bacterial outer-membrane biogenesis. <i>Nature Reviews Microbiology</i> , 2006 , 4, 57-66	22.2	353
122	Defining the roles of the periplasmic chaperones SurA, Skp, and DegP in <i>Escherichia coli</i> . <i>Genes and Development</i> , 2007 , 21, 2473-84	12.6	336
121	Vancomycin derivatives that inhibit peptidoglycan biosynthesis without binding D-Ala-D-Ala. <i>Science</i> , 1999 , 284, 507-11	33.3	304
120	Structure and function of an essential component of the outer membrane protein assembly machine. <i>Science</i> , 2007 , 317, 961-4	33.3	302
119	SEDS proteins are a widespread family of bacterial cell wall polymerases. <i>Nature</i> , 2016 , 537, 634-638	50.4	293
118	Identification of a protein complex that assembles lipopolysaccharide in the outer membrane of <i>Escherichia coli</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006 , 103, 11754-9	11.5	267
117	Barrel membrane protein assembly by the Bam complex. <i>Annual Review of Biochemistry</i> , 2011 , 80, 189-210	29.1	254
116	Lipoprotein SmpA is a component of the YaeT complex that assembles outer membrane proteins in <i>Escherichia coli</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 6400-5	11.5	240
115	Chemical conditionality: a genetic strategy to probe organelle assembly. <i>Cell</i> , 2005 , 121, 307-17	56.2	238
114	Lipoprotein cofactors located in the outer membrane activate bacterial cell wall polymerases. <i>Cell</i> , 2010 , 143, 1110-20	56.2	235
113	YfiO stabilizes the YaeT complex and is essential for outer membrane protein assembly in <i>Escherichia coli</i> . <i>Molecular Microbiology</i> , 2006 , 61, 151-64	4.1	234
112	Bacterial cell wall. MurJ is the flippase of lipid-linked precursors for peptidoglycan biogenesis. <i>Science</i> , 2014 , 345, 220-2	33.3	222
111	Lipopolysaccharide transport and assembly at the outer membrane: the PEZ model. <i>Nature Reviews Microbiology</i> , 2016 , 14, 337-45	22.2	208
110	Transport of lipopolysaccharide across the cell envelope: the long road of discovery. <i>Nature Reviews Microbiology</i> , 2009 , 7, 677-83	22.2	205

109	Reconstitution of outer membrane protein assembly from purified components. <i>Science</i> , 2010 , 328, 890-893	3.3	201
108	On the essentiality of lipopolysaccharide to Gram-negative bacteria. <i>Current Opinion in Microbiology</i> , 2013 , 16, 779-85	7.9	187
107	Identification of two inner-membrane proteins required for the transport of lipopolysaccharide to the outer membrane of Escherichia coli. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008 , 105, 5537-42	11.5	183
106	Characterization of the two-protein complex in Escherichia coli responsible for lipopolysaccharide assembly at the outer membrane. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010 , 107, 5363-8	11.5	152
105	Tandem action of glycosyltransferases in the maturation of vancomycin and teicoplanin aglycones: novel glycopeptides. <i>Biochemistry</i> , 2001 , 40, 4745-55	3.2	144
104	FtsW is a peptidoglycan polymerase that is functional only in complex with its cognate penicillin-binding protein. <i>Nature Microbiology</i> , 2019 , 4, 587-594	26.6	143
103	Outer Membrane Biogenesis. <i>Annual Review of Microbiology</i> , 2017 , 71, 539-556	17.5	142
102	Better substrates for bacterial transglycosylases. <i>Journal of the American Chemical Society</i> , 2001 , 123, 3155-6	16.4	142
101	The complex that inserts lipopolysaccharide into the bacterial outer membrane forms a two-protein plug-and-barrel. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 2486-91	11.5	138
100	Cytoplasmic ATP hydrolysis powers transport of lipopolysaccharide across the periplasm in E. coli. <i>Science</i> , 2012 , 338, 1214-7	33.3	136
99	Vancomycin analogues active against vanA-resistant strains inhibit bacterial transglycosylase without binding substrate. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003 , 100, 5658-63	11.5	125
98	Generalizing Glycosylation: Synthesis of the Blood Group Antigens Lea, Leb, and Lex Using a Standard Set of Reaction Conditions. <i>Journal of the American Chemical Society</i> , 1996 , 118, 9239-9248	16.4	122
97	Crystal structure of a peptidoglycan glycosyltransferase suggests a model for processive glycan chain synthesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 5348-53	11.5	121
96	Proteins required for lipopolysaccharide assembly in Escherichia coli form a transenvelope complex. <i>Biochemistry</i> , 2010 , 49, 4565-7	3.2	113
95	Genetic basis for activity differences between vancomycin and glycolipid derivatives of vancomycin. <i>Science</i> , 2001 , 294, 361-4	33.3	112
94	Regulation of cell size in response to nutrient availability by fatty acid biosynthesis in Escherichia coli. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, E2561-8	11.5	102
93	Synthesis of Vancomycin from the Aglycon. <i>Journal of the American Chemical Society</i> , 1999 , 121, 1237-1244	16.4	100
92	Regulated assembly of the transenvelope protein complex required for lipopolysaccharide export. <i>Biochemistry</i> , 2012 , 51, 4800-6	3.2	99

91	Transpeptidase-mediated incorporation of D-amino acids into bacterial peptidoglycan. <i>Journal of the American Chemical Society</i> , 2011 , 133, 10748-51	16.4	97
90	Lipoprotein LptE is required for the assembly of LptD by the beta-barrel assembly machine in the outer membrane of Escherichia coli. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 2492-7	11.5	97
89	The Role of Hydrophobic Substituents in the Biological Activity of Glycopeptide Antibiotics. <i>Journal of the American Chemical Society</i> , 2000 , 122, 12608-12609	16.4	97
88	Nonconsecutive disulfide bond formation in an essential integral outer membrane protein. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010 , 107, 12245-50	11.5	86
87	Sulfenate Intermediates in the Sulfoxide Glycosylation Reaction. <i>Journal of the American Chemical Society</i> , 1998 , 120, 5961-5969	16.4	83
86	Scavenging Byproducts in the Sulfoxide Glycosylation Reaction: Application to the Synthesis of Ciclamycin O. <i>Journal of the American Chemical Society</i> , 1999 , 121, 6176-6182	16.4	83
85	Reconstitution of peptidoglycan cross-linking leads to improved fluorescent probes of cell wall synthesis. <i>Journal of the American Chemical Society</i> , 2014 , 136, 10874-7	16.4	79
84	Inhibition of the β -barrel assembly machine by a peptide that binds BamD. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 2011-6	11.5	77
83	Lipopolysaccharide is transported to the cell surface by a membrane-to-membrane protein bridge. <i>Science</i> , 2018 , 359, 798-801	33.3	76
82	Structural analysis of the contacts anchoring moenomycin to peptidoglycan glycosyltransferases and implications for antibiotic design. <i>ACS Chemical Biology</i> , 2008 , 3, 429-36	4.9	76
81	The direction of glycan chain elongation by peptidoglycan glycosyltransferases. <i>Journal of the American Chemical Society</i> , 2007 , 129, 12674-5	16.4	76
80	Disulfide rearrangement triggered by translocon assembly controls lipopolysaccharide export. <i>Science</i> , 2012 , 337, 1665-8	33.3	74
79	Detection of lipid-linked peptidoglycan precursors by exploiting an unexpected transpeptidase reaction. <i>Journal of the American Chemical Society</i> , 2014 , 136, 14678-81	16.4	72
78	The Escherichia coli Lpt transenvelope protein complex for lipopolysaccharide export is assembled via conserved structurally homologous domains. <i>Journal of Bacteriology</i> , 2013 , 195, 1100-8	3.5	72
77	Structural basis of unidirectional export of lipopolysaccharide to the cell surface. <i>Nature</i> , 2019 , 567, 550-553	5.4	69
76	Lipid II overproduction allows direct assay of transpeptidase inhibition by β -lactams. <i>Nature Chemical Biology</i> , 2017 , 13, 793-798	11.7	68
75	Activation of the Escherichia coli β -barrel assembly machine (Bam) is required for essential components to interact properly with substrate. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 3487-91	11.5	68
74	Analysis of glycan polymers produced by peptidoglycan glycosyltransferases. <i>Journal of Biological Chemistry</i> , 2007 , 282, 31964-71	5.4	68

73	A systematic investigation of the synthetic utility of glycopeptide glycosyltransferases. <i>Journal of the American Chemical Society</i> , 2005 , 127, 10747-52	16.4	67
72	Structure of the peptidoglycan polymerase RodA resolved by evolutionary coupling analysis. <i>Nature</i> , 2018 , 556, 118-121	50.4	66
71	Characterization of a stalled complex on the E-barrel assembly machine. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 8717-22	11.5	62
70	A central role for PBP2 in the activation of peptidoglycan polymerization by the bacterial cell elongation machinery. <i>PLoS Genetics</i> , 2018 , 14, e1007726	6	61
69	Lipoprotein activators stimulate Escherichia coli penicillin-binding proteins by different mechanisms. <i>Journal of the American Chemical Society</i> , 2014 , 136, 52-5	16.4	60
68	Synthesis of heptaprenyl-lipid IV to analyze peptidoglycan glycosyltransferases. <i>Journal of the American Chemical Society</i> , 2007 , 129, 3080-1	16.4	59
67	Decoupling catalytic activity from biological function of the ATPase that powers lipopolysaccharide transport. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 4982-7	11.5	55
66	Probing the barrier function of the outer membrane with chemical conditionality. <i>ACS Chemical Biology</i> , 2006 , 1, 385-95	4.9	55
65	bam Lipoproteins Assemble BamA in vitro. <i>Biochemistry</i> , 2013 , 52, 6108-13	3.2	52
64	LptE binds to and alters the physical state of LPS to catalyze its assembly at the cell surface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 9467-72	11.5	52
63	Structure of a nascent membrane protein as it folds on the BAM complex. <i>Nature</i> , 2020 , 583, 473-478	50.4	49
62	Lipopolysaccharide transport to the cell surface: biosynthesis and extraction from the inner membrane. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2015 , 370,	5.8	47
61	In vitro reconstitution demonstrates the cell wall ligase activity of LCP proteins. <i>Nature Chemical Biology</i> , 2017 , 13, 396-401	11.7	46
60	The Mechanism of Action of Lysobactin. <i>Journal of the American Chemical Society</i> , 2016 , 138, 100-3	16.4	44
59	Cell-based screen for discovering lipopolysaccharide biogenesis inhibitors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 6834-6839	11.5	44
58	Moenomycin resistance mutations in Staphylococcus aureus reduce peptidoglycan chain length and cause aberrant cell division. <i>ACS Chemical Biology</i> , 2014 , 9, 459-67	4.9	42
57	Lipopolysaccharide transport to the cell surface: periplasmic transport and assembly into the outer membrane. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2015 , 370,	5.8	41
56	The role of the substrate lipid in processive glycan polymerization by the peptidoglycan glycosyltransferases. <i>Journal of the American Chemical Society</i> , 2010 , 132, 48-9	16.4	41

55	Design of an Oligosaccharide Scaffold That Binds in the Minor Groove of DNA. <i>Journal of the American Chemical Society</i> , 2000 , 122, 1883-1890	16.4	41
54	The reconstituted Escherichia coli Bam complex catalyzes multiple rounds of β barrel assembly. <i>Biochemistry</i> , 2011 , 50, 7444-6	3.2	40
53	Forming cross-linked peptidoglycan from synthetic gram-negative Lipid II. <i>Journal of the American Chemical Society</i> , 2013 , 135, 4632-5	16.4	39
52	The Antibiotic Novobiocin Binds and Activates the ATPase That Powers Lipopolysaccharide Transport. <i>Journal of the American Chemical Society</i> , 2017 , 139, 17221-17224	16.4	38
51	Hybrid glycopeptide antibiotics. <i>Journal of the American Chemical Society</i> , 2001 , 123, 12722-3	16.4	38
50	Reconstruction of Vancomycin by Chemical Glycosylation of the Pseudoaglycon. <i>Journal of the American Chemical Society</i> , 1998 , 120, 11014-11015	16.4	37
49	Structural coordination of polymerization and crosslinking by a SEDS-bPBP peptidoglycan synthase complex. <i>Nature Microbiology</i> , 2020 , 5, 813-820	26.6	36
48	Tuning the moenomycin pharmacophore to enable discovery of bacterial cell wall synthesis inhibitors. <i>Journal of the American Chemical Society</i> , 2013 , 135, 3776-9	16.4	36
47	Isolated peptidoglycan glycosyltransferases from different organisms produce different glycan chain lengths. <i>Journal of the American Chemical Society</i> , 2008 , 130, 14068-9	16.4	36
46	Substrate binding to BamD triggers a conformational change in BamA to control membrane insertion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 2359-2364	11.5	35
45	Degradation and reconstruction of moenomycin A and derivatives: dissecting the function of the isoprenoid chain. <i>Journal of the American Chemical Society</i> , 2006 , 128, 14012-3	16.4	34
44	Identification of a Functionally Unique Family of Penicillin-Binding Proteins. <i>Journal of the American Chemical Society</i> , 2017 , 139, 17727-17730	16.4	33
43	Validation of inhibitors of an ABC transporter required to transport lipopolysaccharide to the cell surface in Escherichia coli. <i>Bioorganic and Medicinal Chemistry</i> , 2013 , 21, 4846-51	3.4	32
42	Formation of a β barrel membrane protein is catalyzed by the interior surface of the assembly machine protein BamA. <i>ELife</i> , 2019 , 8,	8.9	31
41	N-methylimidazolium chloride-catalyzed pyrophosphate formation: application to the synthesis of Lipid I and NDP-sugar donors. <i>Bioorganic and Medicinal Chemistry Letters</i> , 2011 , 21, 5050-3	2.9	30
40	Modular synthesis of diphospholipid oligosaccharide fragments of the bacterial cell wall and their use to study the mechanism of moenomycin and other antibiotics. <i>Tetrahedron</i> , 2011 , 67, 9771-9778	2.4	29
39	A practical method for the stereoselective generation of beta-2-deoxy glycosyl phosphates. <i>Organic Letters</i> , 2004 , 6, 2873-6	6.2	29
38	Chemoenzymatic formation of novel aminocoumarin antibiotics by the enzymes CouN1 and CouN7. <i>Biochemistry</i> , 2007 , 46, 8462-71	3.2	28

37	Novobiocin Enhances Polymyxin Activity by Stimulating Lipopolysaccharide Transport. <i>Journal of the American Chemical Society</i> , 2018 , 140, 6749-6753	16.4	27
36	Development of an activity assay for discovery of inhibitors of lipopolysaccharide transport. <i>Journal of the American Chemical Society</i> , 2010 , 132, 2518-9	16.4	27
35	Cofactor bypass variants reveal a conformational control mechanism governing cell wall polymerase activity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 4788-93	11.5	27
34	Membrane integration of an essential β -barrel protein requires burial of an extracellular loop. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 2598-2603	11.5	26
33	Membrane Potential Is Required for MurJ Function. <i>Journal of the American Chemical Society</i> , 2018 , 140, 4481-4484	16.4	26
32	Peptidoglycan Cross-Linking Preferences of Staphylococcus aureus Penicillin-Binding Proteins Have Implications for Treating MRSA Infections. <i>Journal of the American Chemical Society</i> , 2017 , 139, 9791-9794	16.4	26
31	Identification of Residues in the Lipopolysaccharide ABC Transporter That Coordinate ATPase Activity with Extractor Function. <i>MBio</i> , 2016 , 7,	7.8	25
30	Primer preactivation of peptidoglycan polymerases. <i>Journal of the American Chemical Society</i> , 2011 , 133, 8528-30	16.4	25
29	Assembly and Maintenance of Lipids at the Bacterial Outer Membrane. <i>Chemical Reviews</i> , 2021 , 121, 5098-5123	68.1	25
28	Studying a cell division amidase using defined peptidoglycan substrates. <i>Journal of the American Chemical Society</i> , 2009 , 131, 18230-1	16.4	24
27	Substrate Preferences Establish the Order of Cell Wall Assembly in Staphylococcus aureus. <i>Journal of the American Chemical Society</i> , 2018 , 140, 2442-2445	16.4	21
26	Staphylococcus aureus cell growth and division are regulated by an amidase that trims peptides from uncrosslinked peptidoglycan. <i>Nature Microbiology</i> , 2020 , 5, 291-303	26.6	20
25	A Fluorescent Probe Distinguishes between Inhibition of Early and Late Steps of Lipopolysaccharide Biogenesis in Whole Cells. <i>ACS Chemical Biology</i> , 2017 , 12, 928-932	4.9	19
24	A cluster of residues in the lipopolysaccharide exporter that selects substrate variants for transport to the outer membrane. <i>Molecular Microbiology</i> , 2018 , 109, 541-554	4.1	16
23	Structural requirements for VanA activity of vancomycin analogues. <i>Tetrahedron</i> , 2002 , 58, 6585-6594	2.4	16
22	Outer Membrane Translocon Communicates with Inner Membrane ATPase To Stop Lipopolysaccharide Transport. <i>Journal of the American Chemical Society</i> , 2018 , 140, 12691-12694	16.4	16
21	Chemical tools to characterize peptidoglycan synthases. <i>Current Opinion in Chemical Biology</i> , 2019 , 53, 44-50	9.7	15
20	A mutant Escherichia coli that attaches peptidoglycan to lipopolysaccharide and displays cell wall on its surface. <i>ELife</i> , 2014 , 3, e05334	8.9	14

19	The assembly of E-barrel outer membrane proteins. <i>Current Opinion in Microbiology</i> , 2021 , 60, 16-23	7.9	13
18	Direction of Chain Growth and Substrate Preferences of Shape, Elongation, Division, and Sporulation-Family Peptidoglycan Glycosyltransferases. <i>Journal of the American Chemical Society</i> , 2019 , 141, 12994-12997	16.4	12
17	Glycosylation of glycopeptides: a comparison of chemoenzymatic and chemical methods. <i>Tetrahedron: Asymmetry</i> , 2005 , 16, 599-603		12
16	Antibiotic Combinations That Enable One-Step, Targeted Mutagenesis of Chromosomal Genes. <i>ACS Infectious Diseases</i> , 2018 , 4, 1007-1018	5.5	10
15	Detection of Transport Intermediates in the Peptidoglycan Flippase MurJ Identifies Residues Essential for Conformational Cycling. <i>Journal of the American Chemical Society</i> , 2020 , 142, 5482-5486	16.4	9
14	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. <i>MBio</i> , 2019 , 10,	7.8	9
13	FtsW is a peptidoglycan polymerase that is activated by its cognate penicillin-binding protein		9
12	Robust Suppression of Lipopolysaccharide Deficiency in <i>Acinetobacter baumannii</i> by Growth in Minimal Medium. <i>Journal of Bacteriology</i> , 2019 , 201,	3.5	9
11	Structure and reconstitution of a hydrolase complex that may release peptidoglycan from the membrane after polymerization. <i>Nature Microbiology</i> , 2021 , 6, 34-43	26.6	9
10	Pathway-Directed Screen for Inhibitors of the Bacterial Cell Elongation Machinery. <i>Antimicrobial Agents and Chemotherapy</i> , 2019 , 63,	5.9	8
9	Fine-Tuning of λ Activation Suppresses Multiple Assembly-Defective Mutations in <i>Escherichia coli</i> . <i>Journal of Bacteriology</i> , 2019 , 201,	3.5	5
8	The Bacterial Cell Wall: From Lipid II Flipping to Polymerization.. <i>Chemical Reviews</i> , 2022 ,	68.1	4
7	Simple Secondary Amines Inhibit Growth of Gram-Negative Bacteria through Highly Selective Binding to Phenylalanyl-tRNA Synthetase. <i>Journal of the American Chemical Society</i> , 2021 , 143, 623-627	16.4	2
6	The cell cycle in <i>Staphylococcus aureus</i> is regulated by an amidase that controls peptidoglycan synthesis		1
5	Efficient and flexible synthesis of new photoactivatable propofol analogs. <i>Bioorganic and Medicinal Chemistry Letters</i> , 2021 , 39, 127927	2.9	1
4	Genetic approaches to improve clorobiocin production in <i>Streptomyces roseochromogenes</i> NRRL 3504.. <i>Applied Microbiology and Biotechnology</i> , 2022 , 106, 1543	5.7	0
3	Structure of a Fragment of the Bacterial Outer Membrane Protein Assembly Machinery. <i>FASEB Journal</i> , 2007 , 21, A41	0.9	
2	Detection of Lipid-Linked Peptidoglycan Precursors by Exploiting an Unexpected Transpeptidase Reaction. <i>FASEB Journal</i> , 2015 , 29, 573.11	0.9	

- 1 Development of protein microarray tools for the ex vivo profiling of O-linked N-acetylglucosamine transferase (OGT) substrates. *FASEB Journal*, **2013**, 27, lb68 0.9