Howard Ronald Kaback

List of Publications by Year in Descending Order

116 papers	7,283 citations	46 h-index	83 g-index
118 ext. papers	7,654 ext. citations	7.2 avg, IF	5.8 L-index

#	Paper	IF	Citations
116	Investigation of sugar binding kinetics of the E. coli sugar/H symporter XylE using solid supported membrane-based electrophysiology.. *Journal of Biological Chemistry*, **2021**, 101505	5.4	0
115	Diversity in kinetics correlated with structure in nano body-stabilized LacY. *PLoS ONE*, **2020**, 15, e0232846	3.7	1
114	The proton electrochemical gradient induces a kinetic asymmetry in the symport cycle of LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 977-981	11.5	7
113	Monoclonal antibody 4B1 influences the pK of Glu325 in lactose permease (LacY) from Escherichia coli: evidence from SEIRAS. *FEBS Letters*, **2020**, 594, 3356-3362	3.8	
112	Diversity in kinetics correlated with structure in nano body-stabilized LacY **2020**, 15, e0232846		
111	Diversity in kinetics correlated with structure in nano body-stabilized LacY **2020**, 15, e0232846		
110	Diversity in kinetics correlated with structure in nano body-stabilized LacY **2020**, 15, e0232846		
109	Diversity in kinetics correlated with structure in nano body-stabilized LacY **2020**, 15, e0232846		
108	It takes two to tango: The dance of the permease. *Journal of General Physiology*, **2019**, 151, 878-886	3.4	26
107	Arg302 governs the pK of Glu325 in LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 4934-4939	11.5	11
106	Insertion and folding pathways of single membrane proteins guided by translocases and insertases. *Science Advances*, **2019**, 5, eaau6824	14.3	21
105	Oversized galactosides as a probe for conformational dynamics in LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 4146-4151	11.5	6
104	Crystal Structure of a ligand-bound LacY-Nanobody Complex. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 8769-8774	11.5	23
103	Engineered occluded apo-intermediate of LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 12716-12721	11.5	2
102	Quantification of Detergents Complexed with Membrane Proteins. *Scientific Reports*, **2017**, 7, 41751	4.9	43
101	pK of Glu325 in LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 1530-1535	11.5	24
100	An Asymmetric Conformational Change in LacY. *Biochemistry*, **2017**, 56, 1943-1950	3.2	7

99	Crystal structure of a LacY-nanobody complex in a periplasmic-open conformation. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 12420-12425	11.5	30
98	pH Regulation of Electrogenic Sugar/H+ Symport in MFS Sugar Permeases. *PLoS ONE*, **2016**, 11, e0156392	3.7	16
97	YidC assists the stepwise and stochastic folding of membrane proteins. *Nature Chemical Biology*, **2016**, 12, 911-917	11.7	52
96	Thermodynamics of Nanobody Binding to Lactose Permease. *Biochemistry*, **2016**, 55, 5917-5926	3.2	4
95	Thermodynamic mechanism for inhibition of lactose permease by the phosphotransferase protein IIAGlc. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 2407-12	11.5	17
94	Structure of LacY with an β-substituted galactoside: Connecting the binding site to the protonation site. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 9004-9	11.5	36
93	Observing a lipid-dependent alteration in single lactose permeases. *Structure*, **2015**, 23, 754-61	5.2	27
92	Transient conformers of LacY are trapped by nanobodies. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 13839-44	11.5	18
91	A chemiosmotic mechanism of symport. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 1259-64	11.5	71
90	Real-time conformational changes in LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 8440-5	11.5	15
89	Outward-facing conformers of LacY stabilized by nanobodies. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 18548-53	11.5	18
88	Structure-based mechanism for Na(+)/melibiose symport by MelB. *Nature Communications*, **2014**, 5, 3009	17.4	99
87	Structure of sugar-bound LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 1784-8	11.5	101
86	Electrophysiological characterization of uncoupled mutants of LacY. *Biochemistry*, **2013**, 52, 8261-6	3.2	14
85	Trp replacements for tightly interacting Gly-Gly pairs in LacY stabilize an outward-facing conformation. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 8876-81	11.5	38
84	Lactose permease and the alternating access mechanism. *Biochemistry*, **2011**, 50, 9684-93	3.2	93
83	The alternating access transport mechanism in LacY. *Journal of Membrane Biology*, **2011**, 239, 85-93	2.3	87
82	Crystal structure of lactose permease in complex with an affinity inactivator yields unique insight into sugar recognition. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 9361-6	11.5	78

81	Opening the periplasmic cavity in lactose permease is the limiting step for sugar binding. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 15147-51	11.5	37
80	An early event in the transport mechanism of LacY protein: interaction between helices V and I. *Journal of Biological Chemistry*, **2011**, 286, 30415-30422	5.4	16
79	Sugar binding induces the same global conformational change in purified LacY as in the native bacterial membrane. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 9903-8	11.5	33
78	Delineating electrogenic reactions during lactose/H+ symport. *Biochemistry*, **2010**, 49, 6115-21	3.2	35
77	Electrophysiological characterization of LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 7373-8	11.5	49
76	Probing of the rates of alternating access in LacY with Trp fluorescence. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 21561-6	11.5	55
75	Residues in the H+ translocation site define the pKa for sugar binding to LacY. *Biochemistry*, **2009**, 48, 8852-60	3.2	51
74	Protonation and sugar binding to LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 8896-901	11.5	53
73	Opening and closing of the periplasmic gate in lactose permease. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 3774-8	11.5	83
72	Structural determination of wild-type lactose permease. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 15294-8	11.5	193
71	Single-molecule FRET reveals sugar-induced conformational dynamics in LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 12640-5	11.5	133
70	Site-directed alkylation of LacY: effect of the proton electrochemical gradient. *Journal of Molecular Biology*, **2007**, 374, 356-64	6.5	41
69	Site-directed alkylation and the alternating access model for LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 491-4	11.5	132
68	Sugar binding induces an outward facing conformation of LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 16504-9	11.5	155
67	Direct sugar binding to LacY measured by resonance energy transfer. *Biochemistry*, **2006**, 45, 15279-87	3.2	48
66	Lessons from lactose permease. *Annual Review of Biophysics and Biomolecular Structure*, **2006**, 35, 67-91		266
65	Sequence alignment and homology threading reveals prokaryotic and eukaryotic proteins similar to lactose permease. *Journal of Molecular Biology*, **2006**, 358, 1060-70	6.5	43
64	Structural evidence for induced fit and a mechanism for sugar/H+ symport in LacY. *EMBO Journal*, **2006**, 25, 1177-83	13	159

63	Structure and mechanism of the lactose permease. *Comptes Rendus - Biologies*, **2005**, 328, 557-67	1.4	76
62	Binding affinity of lactose permease is not altered by the H+ electrochemical gradient. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 12148-52	11.5	53
61	Exploiting luminescence spectroscopy to elucidate the interaction between sugar and a tryptophan residue in the lactose permease of Escherichia coli. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 12706-11	11.5	55
60	Elucidation of substrate binding interactions in a membrane transport protein by mass spectrometry. *EMBO Journal*, **2003**, 22, 1467-77	13	49
59	Structure and mechanism of the lactose permease of Escherichia coli. *Science*, **2003**, 301, 610-5	33.3	1256
58	Aromatic stacking in the sugar binding site of the lactose permease. *Biochemistry*, **2003**, 42, 1377-82	3.2	68
57	Probing the mechanism of a membrane transport protein with affinity inactivators. *Journal of Biological Chemistry*, **2003**, 278, 10641-8	5.4	12
56	Surface-exposed positions in the transmembrane helices of the lactose permease of Escherichia coli determined by intermolecular thiol cross-linking. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 3475-80	11.5	47
55	Manipulating conformational equilibria in the lactose permease of Escherichia coli. *Journal of Molecular Biology*, **2002**, 315, 561-71	6.5	21
54	The kamikaze approach to membrane transport. *Nature Reviews Molecular Cell Biology*, **2001**, 2, 610-20	48.7	264
53	Engineering conformational flexibility in the lactose permease of Escherichia coli: use of glycine-scanning mutagenesis to rescue mutant Glu325-->Asp. *Biochemistry*, **2001**, 40, 769-76	3.2	28
52	The C-4 hydroxyl group of galactopyranosides is the major determinant for ligand recognition by the lactose permease of Escherichia coli. *Biochemistry*, **2001**, 40, 13015-9	3.2	41
51	Structure-function relationships of integral membrane proteins: membrane transporters vs channels. *Biopolymers*, **2000**, 55, 297-307	2.2	21
50	Effect of the lipid phase transition on the lactose permease from Escherichia coli. *Biochemistry*, **2000**, 39, 14538-42	3.2	16
49	Site-directed sulfhydryl labeling of the lactose permease of Escherichia coli: N-ethylmaleimide-sensitive face of helix II. *Biochemistry*, **2000**, 39, 10649-55	3.2	41
48	Ligand recognition by the lactose permease of Escherichia coli: specificity and affinity are defined by distinct structural elements of galactopyranosides. *Biochemistry*, **2000**, 39, 5097-103	3.2	47
47	Functional conservation in the putative substrate binding site of the sucrose permease from Escherichia coli. *Biochemistry*, **2000**, 39, 6170-5	3.2	12
46	Thiol cross-linking of cytoplasmic loops in the lactose permease of Escherichia coli. *Biochemistry*, **2000**, 39, 3134-40	3.2	25

45	Site-directed sulfhydryl labeling of the lactose permease of Escherichia coli: helix X. *Biochemistry*, **2000**, 39, 10656-61	3.2	32
44	Site-directed sulfhydryl labeling of the lactose permease of Escherichia coli: helix VII. *Biochemistry*, **2000**, 39, 10641-8	3.2	39
43	Proteomics on full-length membrane proteins using mass spectrometry. *Biochemistry*, **2000**, 39, 4237-42	3.2	96
42	What To Do while Awaiting Crystals of a Membrane Transport Protein and Thereafter *Accounts of Chemical Research*, **1999**, 32, 805-813	24.3	62
41	Location of helix III in the lactose permease of Escherichia coli as determined by site-directed thiol cross-linking. *Biochemistry*, **1999**, 38, 16777-82	3.2	14
40	Tertiary contacts of helix V in the lactose permease determined by site-directed chemical cross-linking in situ. *Biochemistry*, **1999**, 38, 2320-5	3.2	19
39	Proximity between periplasmic loops in the lactose permease of Escherichia coli as determined by site-directed spin labeling. *Biochemistry*, **1999**, 38, 3100-5	3.2	30
38	Helix packing in the lactose permease of Escherichia coli determined by site-directed thiol cross-linking: helix I is close to helices V and XI. *Biochemistry*, **1999**, 38, 3120-6	3.2	20
37	Proximity between Glu126 and Arg144 in the lactose permease of Escherichia coli. *Biochemistry*, **1999**, 38, 7407-12	3.2	67
36	Sulfhydryl oxidation of mutants with cysteine in place of acidic residues in the lactose permease. *Biochemistry*, **1998**, 37, 8191-6	3.2	27
35	Tilting of helix I and ligand-induced changes in the lactose permease determined by site-directed chemical cross-linking in situ. *Biochemistry*, **1998**, 37, 15785-90	3.2	33
34	In vitro folding of a membrane protein: effect of denaturation and renaturation on substrate binding by the lactose permease of Escherichia coli. *Molecular Membrane Biology*, **1998**, 15, 15-20	3.4	10
33	Proximity of helices VIII (Ala273) and IX (Met299) in the lactose permease of Escherichia coli. *Biochemistry*, **1998**, 37, 4910-5	3.2	23
32	In vitro biotinylation provides quantitative recovery of highly purified active lactose permease in a single step. *Biochemistry*, **1998**, 37, 15713-9	3.2	19
31	Cys-scanning mutagenesis: a novel approach to structure function relationships in polytopic membrane proteins. *FASEB Journal*, **1998**, 12, 1281-99	0.9	329
30	From membrane to molecule to the third amino acid from the left with a membrane transport protein. *Quarterly Reviews of Biophysics*, **1997**, 30, 333-64	7	120
29	Ligand-induced movement of helix X in the lactose permease from Escherichia coli: a fluorescence quenching study. *Biochemistry*, **1997**, 36, 14120-7	3.2	16
28	Binding of ligand or monoclonal antibody 4B1 induces discrete structural changes in the lactose permease of Escherichia coli. *Biochemistry*, **1997**, 36, 6408-14	3.2	33

27	Site-directed spin-labeling of transmembrane domain VII and the 4B1 antibody epitope in the lactose permease of Escherichia coli. *Biochemistry*, **1997**, 36, 15055-61	3.2	39
26	Proximity of periplasmic loops in the lactose permease of Escherichia coli determined by site-directed cross-linking. *Biochemistry*, **1997**, 36, 11959-65	3.2	55
25	The role of helix VIII in the lactose permease of Escherichia coli: I. Cys-scanning mutagenesis. *Protein Science*, **1997**, 6, 431-7	6.3	26
24	The role of helix VIII in the lactose permease of Escherichia coli: II. Site-directed sulfhydryl modification. *Protein Science*, **1997**, 6, 438-43	6.3	30
23	Binding of monoclonal antibody 4B1 to homologs of the lactose permease of Escherichia coli. *Protein Science*, **1997**, 6, 1503-10	6.3	16
22	Membrane topology of the melibiose permease of Escherichia coli studied by melB-phoA fusion analysis. *Biochemistry*, **1996**, 35, 4161-8	3.2	83
21	Cysteine-scanning mutagenesis of transmembrane domain XII and the flanking periplasmic loop in the lactose permease of EScherichia coli. *Biochemistry*, **1996**, 35, 12909-14	3.2	34
20	Chemical rescue of Asp237-->Ala and Lys358-->Ala mutants in the lactose permease of Escherichia coli. *Biochemistry*, **1996**, 35, 13363-7	3.2	33
19	Site-directed spin labeling demonstrates that transmembrane domain XII in the lactose permease of Escherichia coli is an alpha-helix. *Biochemistry*, **1996**, 35, 12915-8	3.2	42
18	Identification of the epitope for monoclonal antibody 4B1 which uncouples lactose and proton translocation in the lactose permease of Escherichia coli. *Biochemistry*, **1996**, 35, 990-8	3.2	84
17	Engineering the lac permease for purification and crystallization. *Journal of Bioenergetics and Biomembranes*, **1996**, 28, 29-34	3.7	41
16	Fluorescence of native single-Trp mutants in the lactose permease from Escherichia coli: structural properties and evidence for a substrate-induced conformational change. *Protein Science*, **1995**, 4, 2310-8	6.3	34
15	Dynamics of lactose permease of Escherichia coli determined by site-directed chemical labeling and fluorescence spectroscopy. *Biochemistry*, **1995**, 34, 8257-63	3.2	45
14	Role of glutamate-269 in the lactose permease of Escherichia coli. *Molecular Membrane Biology*, **1994**, 11, 9-16	3.4	51
13	A conformational change in the lactose permease of Escherichia coli is induced by ligand binding or membrane potential. *Protein Science*, **1994**, 3, 1052-7	6.3	31
12	Ligand-induced conformational changes in the lactose permease of Escherichia coli: evidence for two binding sites. *Protein Science*, **1994**, 3, 2294-301	6.3	47
11	The role of transmembrane domain III in the lactose permease of Escherichia coli. *Protein Science*, **1994**, 3, 2302-10	6.3	20
10	Expression of lactose permease in contiguous fragments as a probe for membrane-spanning domains. *Biochemistry*, **1994**, 33, 8198-206	3.2	80

9	Cysteine scanning mutagenesis of putative transmembrane helices IX and X in the lactose permease of Escherichia coli. *Protein Science*, **1993**, 2, 1024-33	6.3	104
8	Characterization of site-directed mutants in the lac permease of Escherichia coli. 2. Glutamate-325 replacements. *Biochemistry*, **1989**, 28, 2533-9	3.2	96
7	Purification, reconstitution, and characterization of the lac permease of Escherichia coli. *Methods in Enzymology*, **1986**, 125, 429-52	1.7	152
6	Monoclonal antibodies against the lac carrier protein from Escherichia coli. 2. Binding studies with membrane vesicles and proteoliposomes reconstituted with purified lac carrier protein. *Biochemistry*, **1984**, 23, 3688-93	3.2	94
5	Mechanism of lactose translocation in proteoliposomes reconstituted with lac carrier protein purified from Escherichia coli. 2. Deuterium solvent isotope effects. *Biochemistry*, **1983**, 22, 2531-6	3.2	74
4	Active transport in membrane vesicles from Escherichia coli: the electrochemical proton gradient alters the distribution of the lac carrier between two different kinetic states. *Biochemistry*, **1980**, 19, 5692-702	3.2	101
3	Mechanism of lactose translocation in membrane vesicles from Escherichia coli. 2. Effect of imposed delata psi, delta pH, and Delta mu H+. *Biochemistry*, **1979**, 18, 3697-704	3.2	138
2	EFFECT OF CALCIUM ON INTRACELLULAR SODIUM AND POTASSIUM CONCENTRATIONS IN PLANT AND ANIMAL CELLS. *Nature*, **1964**, 204, 641-2	50.4	45
1	Mass Spectrometry of Membrane Transport Proteins179-189		