Critical role of lipid composition in membrane permeabilization by rabbit neutrophil defensins

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#	Paper	IF	Citations
120	Animal antimicrobial peptides: an overview. **1998**, 47, 415-33		441
119	The dependence of membrane permeability by the antibacterial peptide cecropin B and its analogs, CB-1 and CB-3, on liposomes of different composition. *Journal of Biological Chemistry*, **1998**, 273, 27438-48	5.4	73
118	IV. Paneth cell antimicrobial peptides and the biology of the mucosal barrier. **1999**, 277, G257-61		34
117	The cellular target of histatin 5 on Candida albicans is the energized mitochondrion. *Journal of Biological Chemistry*, **1999**, 274, 7286-91	5.4	210
116	The effect of pH on the structure, binding and model membrane lysis by cecropin B and analogs. **1999**, 1473, 418-30		16
115	Interaction of antimicrobial peptides with biological and model membranes: structural and charge requirements for activity. **1999**, 1462, 29-54		251
114	Membrane protein folding and stability: physical principles. **1999**, 28, 319-65		1468
113	Membrane lysis by the antibacterial peptides cecropins B1 and B3: A spin-label electron spin resonance study on phospholipid bilayers. **1999**, 77, 3120-33		38
112	Combinatorial libraries: a tool to design antimicrobial and antifungal peptide analogues having lytic specificities for structure-activity relationship studies. **2000**, 55, 74-87		106
111	Conformational study of a custom antibacterial peptide cecropin B1: implications of the lytic activity. **2000**, 1479, 275-85		30
110	Effects of the antibiotic peptide microcin J25 on liposomes: role of acyl chain length and negatively charged phospholipid. **2000**, 1509, 65-72		26
109	Three-dimensional structure of RK-1: a novel alpha-defensin peptide. **2000**, 39, 15757-64		31
108	The structure of human beta-defensin-2 shows evidence of higher order oligomerization. *Journal of Biological Chemistry*, **2000**, 275, 32911-8	5.4	253
107	Interaction of polyphemusin I and structural analogs with bacterial membranes, lipopolysaccharide, and lipid monolayers. **2000**, 39, 14504-14		96
106	Detergent-like permeabilization of anionic lipid vesicles by melittin. **2001**, 1514, 253-60		191
105	Interaction of cationic antimicrobial peptides with model membranes. *Journal of Biological Chemistry*, **2001**, 276, 35714-22	5.4	293
104	LUVs lipid composition modulates diffusion of bile acids. **2001**, 110, 165-71		13

103	Susceptibilities of oral bacteria and yeast to mammalian cathelicidins. **2001**, 45, 3216-9		56
102	The solution structures of the human beta-defensins lead to a better understanding of the potent bactericidal activity of HBD3 against Staphylococcus aureus. *Journal of Biological Chemistry*, **2002**, 277, 8279-89	5.4	282
101	The energetics of peptide-lipid interactions: Modulation by interfacial dipoles and cholesterol. **2002** , 309-338		6
100	Mammalian defensins in immunity: more than just microbicidal. **2002**, 23, 291-6		572
99	Single disulfide and linear analogues corresponding to the carboxy-terminal segment of bovine beta-defensin-2: effects of introducing the beta-hairpin nucleating sequence d-pro-gly on antibacterial activity and Biophysical properties. **2003**, 42, 9307-15		44
98	Lipopolysaccharides in bacterial membranes act like cholesterol in eukaryotic plasma membranes in providing protection against melittin-induced bilayer lysis. **2003**, 42, 1101-8		56
97	Molecular basis for membrane selectivity of NK-2, a potent peptide antibiotic derived from NK-lysin. **2003**, 1612, 164-71		42
96	Innate immunity to herpes simplex virus type 2. **2003**, 16, 475-90		42
95	Interactions of mouse Paneth cell alpha-defensins and alpha-defensin precursors with membranes. Prosegment inhibition of peptide association with biomimetic membranes. *Journal of Biological Chemistry*, **2003**, 278, 13838-46	5.4	89
94	Review: Towards antibacterial strategies: studies on the mechanisms of interaction between antibacterial peptides and model membranes. **2003**, 9, 67-84		4
93	Antimicrobial characterization of human beta-defensin 3 derivatives. **2003**, 47, 2804-9		207
92	Fluorescence assays for liposome fusion. **2003**, 372, 260-74		18
91	Biophysical characterization of endotoxin inactivation by NK-2, an antimicrobial peptide derived from mammalian NK-lysin. **2004**, 48, 1593-9		90
90	Antimicrobial proteins and peptides: anti-infective molecules of mammalian leukocytes. **2004**, 76, 909-25		127
89	Structure-activity determinants in paneth cell alpha-defensins: loss-of-function in mouse cryptdin-4 by charge-reversal at arginine residue positions. *Journal of Biological Chemistry*, **2004**, 279, 11976-83	5.4	57
88	Hydrophobicity: an ancient damage-associated molecular pattern that initiates innate immune responses. **2004**, 4, 469-78		940
87	Defensin-mediated innate immunity in the small intestine. **2004**, 18, 405-19		69
86	The interaction of an antimicrobial decapeptide with phospholipid vesicles. **2004**, 25, 675-83		10

85	Mammalian defensins in the antimicrobial immune response. **2005**, 6, 551-7		934
84	Antimicrobial peptides: pore formers or metabolic inhibitors in bacteria?. **2005**, 3, 238-50		4060
83	Paneth cell alpha-defensins: peptide mediators of innate immunity in the small intestine. **2005**, 27, 133-46		51
82	Functional interrelationships between cell membrane and cell wall in antimicrobial peptide-mediated killing of Staphylococcus aureus. **2005**, 49, 3114-21		106
81	Reconstruction of the conserved beta-bulge in mammalian defensins using D-amino acids. *Journal of Biological Chemistry*, **2005**, 280, 32921-9	5.4	60
80	Activity of the de novo engineered antimicrobial peptide WLBU2 against Pseudomonas aeruginosa in human serum and whole blood: implications for systemic applications. **2005**, 49, 3208-16		121
79	Effects of the terminal charges in human neutrophil alpha-defensin 2 on its bactericidal and membrane activity. **2005**, 26, 2377-83		19
78	Lipid-specific membrane activity of human beta-defensin-3. **2006**, 45, 5663-70		35
77	Design and synthesis of novel antimicrobial peptides on the basis of alpha helical domain of Tenecin 1, an insect defensin protein, and structure-activity relationship study. **2006**, 27, 640-8		36
76	Defensins in innate antiviral immunity. **2006**, 6, 447-56		384
75	Membrane interaction of islet amyloid polypeptide. **2007**, 1768, 2002-9		144
74	Aggregation and hemi-fusion of anionic vesicles induced by the antimicrobial peptide cryptdin-4. **2007**, 1768, 1796-804		28
73	Impact of pro segments on the folding and function of human neutrophil alpha-defensins. **2007**, 368, 537-49		28
72	Study of the interaction of human defensins with cell membrane models: relationships between structure and biological activity. **2007**, 111, 11318-29		32
71	The lipid dependence of melittin action investigated by dual-color fluorescence burst analysis. **2007** , 93, 154-63		45
70	Genetics of the innate immune response in inflammatory bowel disease. **2007**, 13, 338-55		56
69	Binding orientation and activity determinants of the antimicrobial peptide cryptdin-4 revealed by potency of mutants. **2007**, 60, 236-42		2
68	Interaction of antibacterial peptides spanning the carboxy-terminal region of human beta-defensins 1-3 with phospholipids at the air-water interface and inner membrane of E. coli. **2008**, 29, 7-14		13

67	Single-molecule investigation of the interactions between reconstituted planar lipid membranes and an analogue of the HP(2-20) antimicrobial peptide. *Biochemical and Biophysical Research Communications*, **2008**, 373, 467-72	3.4	26
66	Influence of lipid composition on membrane activity of antimicrobial phenylene ethynylene oligomers. **2008**, 112, 3495-502		92
65	Mechanisms of alpha-defensin bactericidal action: comparative membrane disruption by Cryptdin-4 and its disulfide-null analogue. **2008**, 47, 12626-34		40
64	Biomolecular engineering by combinatorial design and high-throughput screening: small, soluble peptides that permeabilize membranes. **2008**, 130, 9849-58		110
63	Synthesis, structure, and activities of an oral mucosal alpha-defensin from rhesus macaque. *Journal of Biological Chemistry*, **2008**, 283, 35869-77	5.4	5
62	Anionic amino acids near the pro-alpha-defensin N terminus mediate inhibition of bactericidal activity in mouse pro-cryptdin-4. *Journal of Biological Chemistry*, **2009**, 284, 6826-31	5.4	23
61	Indolicidin-derived antimicrobial peptide analogs with greater bacterial selectivity and requirements for antibacterial and hemolytic activities. **2009**, 1794, 185-92		15
60	Synthesis of antibacterial pseudopeptides with less hemolytic activity from a cytotoxic peptide and their pH-dependent activity. **2009**, 19, 5627-31		3
59	Different modes of membrane permeabilization by two RTX toxins: HlyA from Escherichia coli and CyaA from Bordetella pertussis. **2009**, 1788, 1249-54		13
58	Molecular mechanisms of late apoptotic/necrotic cell clearance. **2010**, 17, 381-97		222
57	Membrane aggregation and perturbation induced by antimicrobial peptide of S-thanatin. *Biochemical and Biophysical Research Communications*, **2010**, 395, 31-5	3.4	26
56	Selective toxicity of antimicrobial peptide S-thanatin on bacteria. **2010**, 31, 1669-73		26
55	Energetics of peptide and protein binding to lipid membranes. **2010**, 677, 14-23		8
54	Describing the mechanism of antimicrobial peptide action with the interfacial activity model. **2010**, 5, 905-17		638
53	The membrane-bound structure and topology of a human □-defensin indicate a dimer pore mechanism for membrane disruption. **2010**, 49, 9770-82		66
52	Development of Antimicrobial Peptides as Therapeutic Agents. **2011**, 1		1
51	Solution structure of LCI, a novel antimicrobial peptide from Bacillus subtilis. **2011**, 50, 3621-7		35
50	Investigating the effects of L- to D-amino acid substitution and deamidation on the activity and membrane interactions of antimicrobial peptide anoplin. **2011**, 1808, 1592-600		27

49	Membrane integrity and amyloid cytotoxicity: a model study involving mitochondria and lysozyme fibrillation products. **2011**, 409, 826-38	48
48	Innate immunity in the human female reproductive tract: endocrine regulation of endogenous antimicrobial protection against HIV and other sexually transmitted infections. **2011**, 65, 196-211	109
47	Mucin dynamics and enteric pathogens. **2011**, 9, 265-78	893
46	Membrane-active host defense peptides--challenges and perspectives for the development of novel anticancer drugs. **2011**, 164, 766-81	305
45	Paneth cell β-defensins in enteric innate immunity. **2011**, 68, 2215-29	105
44	Antimicrobial peptides: successes, challenges and unanswered questions. **2011**, 239, 27-34	342
43	The insect peptide coprisin prevents Clostridium difficile-mediated acute inflammation and mucosal damage through selective antimicrobial activity. **2011**, 55, 4850-7	29
42	CXCL17 is a mucosal chemokine elevated in idiopathic pulmonary fibrosis that exhibits broad antimicrobial activity. **2012**, 188, 6399-406	53
41	Paneth Cells. **2012**, 1211-1228	1
40	Endolytic, pH-responsive HPMA-b-(L-Glu) copolymers synthesized via sequential aqueous RAFT and ring-opening polymerizations. **2013**, 14, 3793-9	12
39	A membrane-translocating peptide penetrates into bilayers without significant bilayer perturbations. **2013**, 104, 2419-28	34
38	A critical evaluation of random copolymer mimesis of homogeneous antimicrobial peptides. **2013**, 46, 1908-1915	64
37	Differential Susceptibility of Bacteria to Mouse Paneth Cell β-Defensins under Anaerobic Conditions. **2014**, 3, 493-508	2
36	Secreted mucosal antimicrobials in the female reproductive tract that are important to consider for HIV prevention. **2014**, 71, 575-88	16
35	Defensin-based anti-infective strategies. **2014**, 304, 93-9	46
34	Highly efficient macromolecule-sized poration of lipid bilayers by a synthetically evolved peptide. **2014**, 136, 4724-31	54
33	Structural basis for antimicrobial activity of lasiocepsin. **2014**, 15, 301-8	7
32	Permeabilization assay for antimicrobial peptides based on pore-spanning lipid membranes on nanoporous alumina. **2014**, 30, 4767-74	7

31	Microemulsions: Biomimetic Systems for Characterization of Biomembranes and Their Associated Biomolecules. **2014**, 196-215		1
30	Defensins in Enteric Mucosal Immunity. **2015**, 271-285		4
29	Membrane interaction of antimicrobial peptides using E. coli lipid extract as model bacterial cell membranes and SFG spectroscopy. **2015**, 187, 20-33		23
28	Structure□Activity Relationships in the Host-Defense Antimicrobial Peptides Defensins. **2015**, 69-97		1
27	Determining the Effects of Membrane-Interacting Peptides on Membrane Integrity. **2015**, 1324, 89-106		18
26	Fungicidal effect of isoquercitrin via inducing membrane disturbance. **2015**, 1848, 695-701		40
25	Simulations of Membrane-Disrupting Peptides II: AMP Piscidin 1 Favors Surface Defects over Pores. **2016**, 111, 1258-1266		43
24	Membrane phase characteristics control NA-CATH activity. **2016**, 1858, 1974-1982		3
23	Reduced levels of genital tract immune biomarkers in postmenopausal women: implications for HIV acquisition. **2016**, 215, 324.e1-324.e10		16
22	The association of defensin HNP-2 with negatively charged membranes: A combined fluorescence and linear dichroism study. **2016**, 1858, 892-903		2
21	Fluorescence and Absorbance Spectroscopy Methods to Study Membrane Perturbations by Antimicrobial Host Defense Peptides. **2017**, 1548, 141-157		5
20	Rifampin- or Capreomycin-Induced Remodeling of the Mycolic Acid Layer Is Mitigated in Synergistic Combinations with Cationic Antimicrobial Peptides. *MSphere*, **2018**, 3,	5	6
19	Turbot (Scophthalmus maximus) Nk-lysin induces protection against the pathogenic parasite Philasterides dicentrarchi via membrane disruption. *Fish and Shellfish Immunology*, **2018**, 82, 190-199	4.3	21
18	Aromatic-rich C-terminal region of LCI is a potent antimicrobial peptide in itself. *Biochemical and Biophysical Research Communications*, **2019**, 519, 372-377	3.4	0
17	Mechanistic Landscape of Membrane-Permeabilizing Peptides. *Chemical Reviews*, **2019**, 119, 6040-6085	68.1	91
16	Liposomal membrane permeability assessment by fluorescence techniques: Main permeabilizing agents, applications and challenges. *International Journal of Pharmaceutics*, **2020**, 580, 119198	6.5	13
15	The Mechanism of Membrane Permeabilization by Peptides: Still an Enigma. *Australian Journal of Chemistry*, **2019**, 73, 96-103	1.2	18
14	Antimicrobial □defensins as multi-target inhibitors against amyloid formation and microbial infection. *Chemical Science*, **2021**, 12, 9124-9139	9.4	9

13	Hidden complexity in membrane permeabilization behavior of antimicrobial polycations. *Physical Chemistry Chemical Physics*, **2021**, 23, 1475-1488	3.6	3
12	Paneth cell alpha-defensin synthesis and function. *Current Topics in Microbiology and Immunology*, **2006**, 306, 1-25	3.3	64
11	Rifampicin or capreomycin induced remodelling of the Mycobacterium smegmatis mycolic acid layer is mitigated in synergistic combinations with cationic antimicrobial peptides.		1
10	Defensins impair phagocytic killing by neutrophils in biomaterial-related infection. *Infection and Immunity*, **1999**, 67, 1640-5	3.7	29
9	Mammalian Antimicrobial Peptides. **2001**,		1
8	Antimicrobial peptides as mediators of epithelial host defense. *Pediatric Research*, **1999**, 45, 785-94	3.2	215
7	Synergistic Action of Antimicrobial Lung Proteins against. *International Journal of Molecular Sciences*, **2021**, 22,	6.3	2
6	Defensins: The natural peptide antibiotic. *Advanced Drug Delivery Reviews*, **2021**, 179, 114008	18.5	5
5	Bacterial Evasion of Host-Derived Antimicrobial Peptides on Mucosal Surfaces. **2000**, 19-40		
4	Gut Microbiota, Obesity and Metabolic Dysfunction. *Indonesian Biomedical Journal*, **2011**, 3, 150	2.6	
3	Antimicrobial Peptide Effectors of Small Intestinal Innate Immunity. 191-221		
2	BENZOATE GROUP ATTACHMENT TO TEMPO PROVIDES ENHANCED DISCRIMINATION OF LIPOSOMES FABRICATED USING HUMAN LUNG NORMAL AND CARCINOMA CELLS. **2022**, 7, 261-267		0
1	Etiology of viral induced acute liver failure and defensins as potential therapeutic agents in ALF treatment. 14,		0