Venigallabasaveswara Rao

List of Publications by Year
in descending order

114 papers	5,455 citations	61984 43 h-index	95266 68 g-index
123 all docs	123 docs citations	123 times ranked	3146 citing authors

#	Article	IF	Citations
1	The Bacteriophage DNA Packaging Motor. Annual Review of Genetics, 2008, 42, 647-681.	7.6	338
2	Molecular architecture of the prolate head of bacteriophage T4. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 6003-6008.	7.1	271
3	The Structure of the Phage T4 DNA Packaging Motor Suggests a Mechanism Dependent on Electrostatic Forces. Cell, 2008, 135, 1251-1262.	28.9	226
4	Single phage T4 DNA packaging motors exhibit large force generation, high velocity, and dynamic variability. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 16868-16873.	7.1	175
5	Mechanisms of DNA Packaging by Large Double-Stranded DNA Viruses. Annual Review of Virology, 2015, 2, 351-378.	6.7	132
6	Genome packaging in viruses. Current Opinion in Structural Biology, 2010, 20, 114-120.	5.7	124
7	Cloning, overexpression and purification of the terminase proteins gp16 and gp17 of bacteriophage T4. Journal of Molecular Biology, 1988, 200, 475-488.	4.2	120
8	The Structure of the ATPase that Powers DNA Packaging into Bacteriophage T4 Procapsids. Molecular Cell, 2007, 25, 943-949.	9.7	116
9	Sequence analysis of bacteriophage T4 DNA packaging/terminase genes 16 and 17 reveals a common ATPase center in the large subunit of viral terminases. Nucleic Acids Research, 2002, 30, 4009-4021.	14.5	115
10	The Bacteriophage DNA Packaging Machine. Advances in Experimental Medicine and Biology, 2012, 726, 489-509.	1.6	111
11	Genetic Engineering of Bacteriophages Against Infectious Diseases. Frontiers in Microbiology, 2019, 10, 954.	3.5	101
12	Engineering of Bacteriophage T4 Genome Using CRISPR-Cas9. ACS Synthetic Biology, 2017, 6, 1952-1961.	3.8	96
13	In vitro and in vivo delivery of genes and proteins using the bacteriophage T4 DNA packaging machine. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 5846-5851.	7.1	92
14	Biochemical Characterization of an ATPase Activity Associated with the Large Packaging Subunit gp17 from Bacteriophage T4. Journal of Biological Chemistry, 2000, 275, 37127-37136.	3.4	91
15	Structure and assembly of bacteriophage T4 head. Virology Journal, 2010, 7, 356.	3.4	91
16	Cryo-EM structure of the bacteriophage T4 portal protein assembly at near-atomic resolution. Nature Communications, 2015, 6, 7548.	12.8	88
17	Structure and function of the small terminase component of the DNA packaging machine in T4-like bacteriophages. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 817-822.	7.1	87
18	Bacteriophage T4 nanoparticles for vaccine delivery against infectious diseases. Advanced Drug Delivery Reviews, 2019, 145, 57-72.	13.7	83

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19	Structure of the Small Outer Capsid Protein, Soc: A Clamp for Stabilizing Capsids of T4-like Phages. Journal of Molecular Biology, 2010, 395, 728-741.	4.2	81
20	The Functional Domains of Bacteriophage T4 Terminase. Journal of Biological Chemistry, 2004, 279, 40795-40801.	3.4	78
21	Assembly of Human Immunodeficiency Virus (HIV) Antigens on Bacteriophage T4: a Novel In Vitro Approach To Construct Multicomponent HIV Vaccines. Journal of Virology, 2006, 80, 7688-7698.	3.4	78
22	Molecular Architecture of Bacteriophage T4 Capsid: Vertex Structure and Bimodal Binding of the Stabilizing Accessory Protein, Soc. Virology, 2000, 271, 321-333.	2.4	71
23	The N-terminal ATPase site in the large terminase protein gp17 is critically required for DNA packaging in bacteriophage T4 1 1Edited by M. Gottesman. Journal of Molecular Biology, 2001, 314, 401-411.	4.2	69
24	Multicomponent anthrax toxin display and delivery using bacteriophage T4. Vaccine, 2007, 25, 1225-1235.	3.8	68
25	The Molecular Architecture of the Bacteriophage T4 Neck. Journal of Molecular Biology, 2013, 425, 1731-1744.	4.2	66
26	DNA packaging of bacteriophage T4 proheads in vitro evidence that prohead expansion is not coupled to DNA packaging. Journal of Molecular Biology, 1985, 185, 565-578.	4.2	65
27	Structure, Assembly, and DNA Packaging of the Bacteriophage T4 Head. Advances in Virus Research, 2012, 82, 119-153.	2.1	65
28	The DNA Translocating ATPase of Bacteriophage T4 Packaging Motor. Journal of Molecular Biology, 2006, 363, 786-799.	4.2	64
29	Structure of the Three N-Terminal Immunoglobulin Domains of the Highly Immunogenic Outer Capsid Protein from a T4-Like Bacteriophage. Journal of Virology, 2011, 85, 8141-8148.	3.4	64
30	Cryo-EM structure of the bacteriophage T4 isometric head at 3.3-Ã… resolution and its relevance to the assembly of icosahedral viruses. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E8184-E8193.	7.1	63
31	A Bacteriophage T4 Nanoparticle-Based Dual Vaccine against Anthrax and Plague. MBio, 2018, 9, .	4.1	62
32	A rapid and sensitive PCR strategy employed for amplification and sequencing of porA from a single colony-forming unit of Neisseria meningitidis. Gene, 1993, 137, 153-162.	2.2	61
33	In vitro binding of anthrax protective antigen on bacteriophage T4 capsid surface through Hocâ€"capsid interactions: A strategy for efficient display of large full-length proteins. Virology, 2006, 345, 190-198.	2.4	60
34	Analysis of capsid portal protein and terminase functional domains: interaction sites required for DNA packaging in bacteriophage T4. Journal of Molecular Biology, 1999, 289, 249-260.	4.2	59
35	Correlation between Lethal Toxin-Neutralizing Antibody Titers and Protection from Intranasal Challenge with Bacillus anthracis Ames Strain Spores in Mice after Transcutaneous Immunization with Recombinant Anthrax Protective Antigen. Infection and Immunity, 2006, 74, 794-797.	2.2	56
36	Mutated and Bacteriophage T4 Nanoparticle Arrayed F1-V Immunogens from Yersinia pestis as Next Generation Plague Vaccines. PLoS Pathogens, 2013, 9, e1003495.	4.7	56

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37	Functional analysis of the highly antigenic outer capsid protein, Hoc, a virus decoration protein from T4â€like bacteriophages. Molecular Microbiology, 2010, 77, 444-455.	2.5	54
38	A Promiscuous DNA Packaging Machine from Bacteriophage T4. PLoS Biology, 2011, 9, e1000592.	5.6	53
39	Direct Sequencing of Polymerase Chain Reaction-Amplified DNA. Analytical Biochemistry, 1994, 216, 1-14.	2.4	52
40	Assembly of the Small Outer Capsid Protein, Soc, on Bacteriophage T4: A Novel System for High Density Display of Multiple Large Anthrax Toxins and Foreign Proteins on Phage Capsid. Journal of Molecular Biology, 2007, 370, 1006-1019.	4.2	52
41	An ATP Hydrolysis Sensor in the DNA Packaging Motor from Bacteriophage T4 Suggests an Inchworm-Type Translocation Mechanism. Journal of Molecular Biology, 2007, 369, 79-94.	4.2	48
42	Unexpected evolutionary benefit to phages imparted by bacterial CRISPR-Cas9. Science Advances, 2018, 4, eaar4134.	10.3	47
43	The Small Terminase, gp16, of Bacteriophage T4 Is a Regulator of the DNA Packaging Motor. Journal of Biological Chemistry, 2009, 284, 24490-24500.	3.4	46
44	Functional analysis of the DNA-packaging/terminase protein gp17 from bacteriophage T4 1 1Edited by M. Gottesman. Journal of Molecular Biology, 1998, 281, 803-814.	4.2	44
45	Bacteriophage T4 Capsid: A Unique Platform for Efficient Surface Assembly of Macromolecular Complexes. Journal of Molecular Biology, 2006, 363, 577-588.	4.2	44
46	A universal bacteriophage T4 nanoparticle platform to design multiplex SARS-CoV-2 vaccine candidates by CRISPR engineering. Science Advances, 2021, 7, eabh1547.	10.3	44
47	The headful packaging nuclease of bacteriophage T4. Molecular Microbiology, 2008, 69, 1180-1190.	2.5	43
48	Anthrax Vaccine Antigen-Adjuvant Formulations Completely Protect New Zealand White Rabbits against Challenge with Bacillus anthracis Ames Strain Spores. Vaccine Journal, 2012, 19, 11-16.	3.1	43
49	A Discontinuous Headful Packaging Model for Packaging Less Than Headful Length DNA Molecules by Bacteriophage T4. Journal of Molecular Biology, 1996, 258, 839-850.	4.2	38
50	Molecular anatomy of the receptor binding module of a bacteriophage long tail fiber. PLoS Pathogens, 2019, 15, e1008193.	4.7	38
51	Novel and deviant Walker A ATP-binding motifs in bacteriophage large terminaseâ€“DNA packaging proteins. Virology, 2004, 321, 217-221.	2.4	37
52	Structural analysis of DNA cleaved in vivo by bacteriophage T4 terminase. Gene, 1994, 146, 67-72.	2.2	36
53	Defining the Bacteriophage T4 DNA Packaging Machine: Evidence for a C-terminal DNA Cleavage Domain in the Large Terminase/Packaging Protein gp17. Journal of Molecular Biology, 2003, 334, 37-52.	4.2	36
54	Defining the ATPase Center of Bacteriophage T4 DNA Packaging Machine: Requirement for a Catalytic Glutamate Residue in the Large Terminase Protein gp17. Journal of Molecular Biology, 2003, 331, 139-154.	4.2	35

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55	Highly effective generic adjuvant systems for orphan or poverty-related vaccines. Vaccine, 2011, 29, 873-877.	3.8	35
56	The dynamic pause-unpackaging state, an off-translocation recovery state of a DNA packaging motor from bacteriophage T4. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20000-20005.	7.1	34
57	Functional Analysis of the Bacteriophage T4 DNA-packaging ATPase Motor. Journal of Biological Chemistry, 2006, 281, 518-527.	3.4	33
58	Covalent Modifications of the Bacteriophage Genome Confer a Degree of Resistance to Bacterial CRISPR Systems. Journal of Virology, 2020, 94, .	3.4	32
59	Dynamic Shifts in the HIV Proviral Landscape During Long Term Combination Antiretroviral Therapy: Implications for Persistence and Control of HIV Infections. Viruses, 2020, 12, 136.	3.3	32
60	A rapid polymerase-chain-reaction-directed sequencing strategy using a thermostable DNA polymerase from Thermus flavus. Gene, 1992, 113, 17-23.	2.2	31
61	Mutations Altering a Structurally Conserved Loop-Helix-Loop Region of a Viral Packaging Motor Change DNA Translocation Velocity and Processivity. Journal of Biological Chemistry, 2010, 285, 24282-24289.	3.4	29
62	Regulation by interdomain communication of a headful packaging nuclease from bacteriophage T4. Nucleic Acids Research, 2011, 39, 2742-2755.	14.5	29
63	Specificity of Interactions among the DNA-packaging Machine Components of T4-related Bacteriophages. Journal of Biological Chemistry, 2011, 286, 3944-3956.	3.4	28
64	A prokaryotic-eukaryotic hybrid viral vector for delivery of large cargos of genes and proteins into human cells. Science Advances, 2019, 5, eaax0064.	10.3	28
65	Membrane-associated assembly of a phage T4 DNA entrance vertex structure studied with expression vectors. Journal of Molecular Biology, 1989, 209, 667-681.	4.2	27
66	Portal-Large Terminase Interactions of the Bacteriophage T4 DNA Packaging Machine Implicate a Molecular Lever Mechanism for Coupling ATPase to DNA Translocation. Journal of Virology, 2012, 86, 4046-4057.	3.4	27
67	Structural morphing in a symmetry-mismatched viral vertex. Nature Communications, 2020, 11, 1713.	12.8	27
68	Evidence that a phage T4 DNA packaging enzyme is a processed form of the major capsid gene product. Cell, 1985, 42, 967-977.	28.9	26
69	Evidence for an electrostatic mechanism of force generation by the bacteriophage T4 DNA packaging motor. Nature Communications, 2014, 5, 4173.	12.8	26
70	Structureâ€"Function Analysis of the DNA Translocating Portal of the Bacteriophage T4 Packaging Machine. Journal of Molecular Biology, 2014, 426, 1019-1038.	4.2	26
71	A Bivalent Anthraxâ€"Plague Vaccine That Can Protect against Two Tier-1 Bioterror Pathogens, Bacillus anthracis and Yersinia pestis. Frontiers in Immunology, 2017, 8, 687.	4.8	26
72	The ATPase Domain of the Large Terminase Protein, gp17, from Bacteriophage T4 Binds DNA: Implications to the DNA Packaging Mechanism. Journal of Molecular Biology, 2008, 376, 1272-1281.	4.2	25

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73	HIV-1 Variable Loop 2 and its Importance in HIV-1 Infection and Vaccine Development. Current HIV Research, 2013, 11, 427-438.	0.5	25
74	A phage T4 in vitro packaging system for cloning long DNA molecules. Gene, 1992, 113, 25-33.	2.2	24
75	A Critical Coiled Coil Motif in the Small Terminase, gp16, from Bacteriophage T4: Insights into DNA Packaging Initiation and Assembly of Packaging Motor. Journal of Molecular Biology, 2006, 358, 67-82.	4.2	24
76	Highly Effective Soluble and Bacteriophage T4 Nanoparticle Plague Vaccines Against Yersinia pestis. Methods in Molecular Biology, 2016, 1403, 499-518.	0.9	24
77	Nucleotide-dependent DNA gripping and an end-clamp mechanism regulate the bacteriophage T4 viral packaging motor. Nature Communications, 2018, 9, 5434.	12.8	24
78	Single-molecule packaging initiation in real time by a viral DNA packaging machine from bacteriophage T4. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15096-15101.	7.1	22
79	A New Approach to Produce HIV-1 Envelope Trimers. Journal of Biological Chemistry, 2015, 290, 19780-19795.	3.4	22
80	Bacteriophage T4 Escapes CRISPR Attack by Minihomology Recombination and Repair. MBio, 2021, 12, e0136121.	4.1	22
81	Bacteriophage T4 as a Nanoparticle Platform to Display and Deliver Pathogen Antigens: Construction of an Effective Anthrax Vaccine. Methods in Molecular Biology, 2017, 1581, 255-267.	0.9	20
82	Designing a Soluble Near Full-length HIV-1 gp41 Trimer. Journal of Biological Chemistry, 2013, 288, 234-246.	3.4	19
83	Effect of cytokines on Siglec-1 and HIV-1 entry in monocyteâ€“derived macrophages: the importance of HIV-1 envelope V1V2 region. Journal of Leukocyte Biology, 2016, 99, 1089-1106.	3.3	19
84	DNA Packaging in Bacteriophage T4. , 2005, , 40-58.		18
85	Glycosylation and oligomeric state of envelope protein might influence HIV-1 virion capture by Î±4Î²7 integrin. Virology, 2017, 508, 199-212.	2.4	18
86	Cryo-electron microscopy study of bacteriophage T4 displaying anthrax toxin proteins. Virology, 2007, 367, 422-427.	2.4	17
87	A sequestered fusion peptide in the structure of an HIV-1 transmitted founder envelope trimer. Nature Communications, 2019, 10, 873.	12.8	17
88	Novel Mutants in the 5â€² Upstream Region of the Portal Protein Gene20Overcome a gp40-dependent Prohead Assembly Block in Bacteriophage T4. Journal of Molecular Biology, 1996, 263, 539-550.	4.2	16
89	Engineering T4 Bacteriophage for <i>In Vivo</i> Display by Type V CRISPR-Cas Genome Editing. ACS Synthetic Biology, 2021, 10, 2639-2648.	3.8	15
90	Anthrax LFn-PA Hybrid Antigens: Biochemistry, Immunogenicity, and Protection Against Lethal Ames Spore Challenge in Rabbits. The Open Vaccine Journal, 2009, 2, 92-99.	0.6	15

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91	Bacteriophage T4 Vaccine Platform for Next-Generation Influenza Vaccine Development. Frontiers in Immunology, 2021, 12, 745625.	4.8	15
92	The remarkable viral portal vertex: structure and a plausible model for mechanism. Current Opinion in Virology, 2021, 51, 65-73.	5.4	13
93	Exclusion of small terminase mediated DNA threading models for genome packaging in bacteriophage T4. Nucleic Acids Research, 2016, 44, 4425-4439.	14.5	11
94	A viral genome packaging ring-ATPase is a flexibly coordinated pentamer. Nature Communications, 2021, 12, 6548.	12.8	10
95	Altering the speed of a DNA packaging motor from bacteriophage T4. Nucleic Acids Research, 2017, 45, 11437-11448.	14.5	9
96	Viruses: Sophisticated Biological Machines. Advances in Experimental Medicine and Biology, 2012, 726, 1-3.	1.6	8
97	Adenine Recognition Is a Key Checkpoint in the Energy Release Mechanism of Phage T4 DNA Packaging Motor. Journal of Molecular Biology, 2012, 415, 329-342.	4.2	7
98	Quantitative analyses reveal distinct sensitivities of the capture of HIV-1 primary viruses and pseudoviruses to broadly neutralizing antibodies. Virology, 2017, 508, 188-198.	2.4	7
99	Preparation of a Bacteriophage T4-based Prokaryotic-eukaryotic Hybrid Viral Vector for Delivery of Large Cargos of Genes and Proteins into Human Cells. Bio-protocol, 2020, 10, e3573.	0.4	7
100	CRISPR Engineering of Bacteriophage T4 to Design Vaccines Against SARS-CoV-2 and Emerging Pathogens. Methods in Molecular Biology, 2022, 2410, 209-228.	0.9	7
101	Humoral Response to the HIV-1 Envelope V2 Region in a Thai Early Acute Infection Cohort. Cells, 2019, 8, 365.	4.1	6
102	Purification and Characterization of Giant Empty Proheads from Packaging-Defective 23ptg Mutants of Bacteriophage T4. Virology, 1993, 196, 896-899.	2.4	5
103	A phage-encoded nucleoid associated protein compacts both host and phage DNA and derepresses H-NS silencing. Nucleic Acids Research, 2021, 49, 9229-9245.	14.5	5
104	Designing a nine cysteine-less DNA packaging motor from bacteriophage T4 reveals new insights into ATPase structure and function. Virology, 2014, 468-470, 660-668.	2.4	4
105	Selection and immune recognition of HIV-1 MPER mimotopes. Virology, 2020, 550, 99-108.	2.4	4
106	A virus DNA gate: Zipping and unzipping the packed viral genome. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 8403-8404.	7.1	3
107	Function of a viral genome packaging motor from bacteriophage T4 is insensitive to DNA sequence. Nucleic Acids Research, 2020, 48, 11602-11614.	14.5	3
108	Mechanism of Coordination of the Bacteriophage T4 DNA Packaging Motor Analyzed by Real-Time Single Molecule Fluorescence Assay. Biophysical Journal, 2016, 110, 46a.	0.5	1

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109	Studies of viral DNA packaging motors with optical tweezers: a comparison of motor function in bacteriophages Ï†29, Î», and T4. Proceedings of SPIE, 2007, , .	0.8	0
110	Liposomes containing glucosyl ceramide specifically bind T4 bacteriophage: a self-assembling nanocarrier formulation. Journal of Liposome Research, 2011, 21, 279-285.	3.3	0
111	Testing a structural model for viral DNA packaging motor function by optical tweezers measurements, site directed mutagenesis, and molecular dynamics calculations. , 2013, , .		0
112	Characterization of the Binding Affinity of Siglec-1 to gp120, gp145, and V2 Loop via Sialic Acid Binding Motif. AIDS Research and Human Retroviruses, 2014, 30, A119-A120.	1.1	0
113	Primary HIV-1 and Infectious Molecular Clones Are Differentially Susceptible to Broadly Neutralizing Antibodies. Vaccines, 2020, 8, 782.	4.4	0
114	Bacteriophage Vaccines. , 2021, , 259-264.		0