Virus-like particles: Passport to immune recognition

Methods

40, 60-65

DOI: 10.1016/j.ymeth.2006.07.018

Citation Report

#	Article	IF	Citations
1	Pathobiology of henipavirus entry: insights into therapeutic strategies. Future Virology, 2007, 2, 267-282.	0.9	3
2	Production of recombinant HIV-1/HBV virus-like particles in Nicotiana tabacum and Arabidopsis thaliana plants for a bivalent plant-based vaccine. Vaccine, 2007, 25, 8228-8240.	1.7	44
3	Improving vaccines by incorporating immunological coadjuvants. Expert Review of Vaccines, 2007, 6, 559-578.	2.0	78
4	Influenza virosomes as a combined vaccine carrier and adjuvant system for prophylactic and therapeutic immunizations. Expert Review of Vaccines, 2007, 6, 711-721.	2.0	78
5	Strong and Heterogeneous Adsorption of Infectious Bursal Disease VP2 Subviral Particle with Immobilized Metal Ions Dependent on Two Surface Histidine Residues. Analytical Chemistry, 2007, 79, 7654-7661.	3.2	5
6	Virus-like particlesâ€"universal molecular toolboxes. Current Opinion in Biotechnology, 2007, 18, 537-545.	3.3	263
7	Generation of chimeric HBc proteins with epitopes in E.coli: Formation of virus-like particles and a potent inducer of antigen-specific cytotoxic immune response and anti-tumor effect in vivo. Cellular Immunology, 2007, 247, 18-27.	1.4	28
8	Virus-like particles: flexible platforms for vaccine development. Expert Review of Vaccines, 2007, 6, 381-390.	2.0	280
9	Cowpea Mosaic Virus Capsid: A Promising Carrier for the Development of Carbohydrate Based Antitumor Vaccines. Chemistry - A European Journal, 2008, 14, 4939-4947.	1.7	73
10	Cancer vaccines: Accomplishments and challenges. Critical Reviews in Oncology/Hematology, 2008, 67, 93-102.	2.0	44
11	Nanotechnology in vaccine delivery. Advanced Drug Delivery Reviews, 2008, 60, 915-928.	6.6	479
12	Study of Detergent-Mediated Liberation of Hepatitis B Virus-like Particles from S. cerevisiae Homogenate: Identifying a Framework for the Design of Future-Generation Lipoprotein Vaccine Processes. Biotechnology Progress, 2008, 24, 623-631.	1.3	23
13	Influenza virusâ€like particles produced by transient expression in Nicotiana benthamiana induce a protective immune response against a lethal viral challenge in mice. Plant Biotechnology Journal, 2008, 6, 930-940.	4.1	251
14	Virus-sized vaccine delivery systems. Drug Discovery Today, 2008, 13, 882-887.	3.2	91
15	Development of hepatitis B virus capsids into a whole-chain protein antigen display platform: New particulate Lyme disease vaccines. International Journal of Medical Microbiology, 2008, 298, 135-142.	1.5	38
16	Chimeric coronavirus-like particles carrying severe acute respiratory syndrome coronavirus (SCoV) S protein protect mice against challenge with SCoV. Vaccine, 2008, 26, 797-808.	1.7	68
17	Immunization with virus-like particles of enterovirus 71 elicits potent immune responses and protects mice against lethal challenge. Vaccine, 2008, 26, 1855-1862.	1.7	194
18	The truncated virus-like particles of C6/36 cell densovirus: Implications for the assembly mechanism of brevidensovirus. Virus Research, 2008, 132, 248-252.	1.1	5

#	Article	IF	Citations
19	Baculovirus as an expression and/or delivery vehicle for vaccine antigens. Expert Review of Vaccines, 2008, 7, 363-371.	2.0	79
20	Promising particle-based vaccines in cancer therapy. Expert Review of Vaccines, 2008, 7, 1103-1119.	2.0	61
21	Emerging vaccines for influenza. Expert Opinion on Emerging Drugs, 2008, 13, 21-40.	1.0	31
22	Modular biomimetic drug delivery systems. Journal of Drug Delivery Science and Technology, 2008, 18, 59-68.	1.4	27
23	The coming of age of virus-like particle vaccines. Biological Chemistry, 2008, 389, 521-536.	1.2	333
24	Recombinant nucleocapsid-like particles from dengue-2 virus induce protective CD4+ and CD8+ cells against viral encephalitis in mice. International Immunology, 2009, 21, 1175-1183.	1.8	29
25	Delivery of a foreign epitope by sharing amino acid residues with the carrier matrix. Journal of Virological Methods, 2009, 158, 35-40.	1.0	7
26	Vaccination with virus-like particles protects mice from lethal infection of Rift Valley Fever Virus. Virology, 2009, 385, 409-415.	1.1	86
27	Anti-tumor CD8+ T cell immunity elicited by HIV-1-based virus-like particles incorporating HPV-16 E7 protein. Virology, 2009, 395, 45-55.	1.1	39
28	Reverse genetics technology for Rift Valley fever virus: Current and future applications for the development of therapeutics and vaccines. Antiviral Research, 2009, 84, 101-118.	1.9	76
29	Multiepitope peptide-loaded virus-like particles as a vaccine against hepatitis B virus-related hepatocellular carcinoma. Hepatology, 2009, 49, 1492-1502.	3.6	64
30	Strategies for optimizing targeting and delivery of mucosal HIV vaccines. European Journal of Immunology, 2009, 39, 2657-2669.	1.6	26
31	Exploiting the intracellular compartmentalization characteristics of the S. cerevisiae host cell for enhancing primary purification of lipidâ€envelope virusâ€like particles. Biotechnology Progress, 2010, 26, 26-33.	1.3	15
32	Host Responses from Innate to Adaptive Immunity after Vaccination: Molecular and Cellular Events. Molecules and Cells, 2009, 27, 5-14.	1.0	47
33	Production of FMDV virus-like particles by a SUMO fusion protein approach in Escherichia coli. Journal of Biomedical Science, 2009, 16, 69.	2.6	35
34	Challenges for the production of virus-like particles in insect cells: The case of rotavirus-like particles. Biochemical Engineering Journal, 2009, 45, 158-167.	1.8	59
35	Immunogenicity of zona pellucida glycoprotein-3 and spermatozoa YLP12 peptides presented on Johnson grass mosaic virus-like particles. Vaccine, 2009, 27, 2948-2953.	1.7	24
36	Influenza recombinant vaccine: Matrix protein M1 on the platform of the adenovirus dodecahedron. Vaccine, 2009, 27, 7385-7393.	1.7	20

#	Article	IF	Citations
37	Development of the RTS,S/AS malaria candidate vaccine. Vaccine, 2009, 27, G67-G71.	1.7	40
38	Efficient induction of human T-cell leukemia virus-1-specific CTL by chimeric particle without adjuvant as a prophylactic for adult T-cell leukemia. Molecular Immunology, 2009, 47, 606-613.	1.0	15
39	Modulation of allergen-specific T-lymphocyte function by virus-like particles decorated with HLA class II molecules. Journal of Allergy and Clinical Immunology, 2009, 124, 121-128.	1.5	27
40	Simple high-cell density fed-batch technique for high-level recombinant protein production with Pichia pastoris: Application to intracellular production of Hepatitis B surface antigen. Microbial Cell Factories, 2009, 8, 13.	1.9	81
41	Chimeric recombinant rotavirus-like particles as a vehicle for the display of heterologous epitopes. Virology Journal, 2009, 6, 192.	1.4	22
42	Use of hepadnavirus core proteins as vaccine platforms. Expert Review of Vaccines, 2009, 8, 1565-1573.	2.0	85
43	Novel adjuvants for B cell immune responses. Current Opinion in HIV and AIDS, 2009, 4, 441-446.	1.5	18
44	Virus-like particles show promise as candidates for new vaccine strategies. Future Virology, 2010, 5, 371-374.	0.9	5
45	Advances in the design and delivery of peptide subunit vaccines with a focus on Toll-like receptor agonists. Expert Review of Vaccines, 2010, 9, 157-173.	2.0	164
46	Virus-like particles in vaccine development. Expert Review of Vaccines, 2010, 9, 1149-1176.	2.0	671
47	Generation of a tumor vaccine candidate based on conjugation of a MUC1 peptide to polyionic papillomavirus virus-like particles. Cancer Immunology, Immunotherapy, 2010, 59, 1685-1696.	2.0	55
48	Nucleocapsid-like particles of dengue-2 virus enhance the immune response against a recombinant protein of dengue-4 virus. Archives of Virology, 2010, 155, 1587-1595.	0.9	17
49	Real-time Detection of Single Immobilized Nanoparticles by Surface Plasmon Resonance Imaging. Plasmonics, 2010, 5, 31-35.	1.8	84
50	Novel suspension cell-based vaccine production systems for Rift Valley fever virus-like particles. Journal of Virological Methods, 2010, 169, 259-268.	1.0	19
51	Expression of a foreign epitope on infectious pancreatic necrosis virus VP2 capsid protein subviral particle (SVP) and immunogenicity in rainbow trout. Antiviral Research, 2010, 85, 525-531.	1.9	27
52	A replication-incompetent Rift Valley fever vaccine: Chimeric virus-like particles protect mice and rats against lethal challenge. Virology, 2010, 397, 187-198.	1.1	67
53	Separation and quantification of doubleâ€•and tripleâ€layered rotavirusâ€like particles by CZE. Electrophoresis, 2010, 31, 1376-1381.	1.3	18
54	Identification of poliovirions and subviral particles by capillary electrophoresis. Electrophoresis, 2010, 31, 3281-3287.	1.3	16

#	Article	IF	Citations
55	Purification of His-tagged hepatitis B core antigen from unclarified bacterial homogenate using immobilized metal affinity-expanded bed adsorption chromatography. Journal of Chromatography A, 2010, 1217, 3473-3480.	1.8	34
56	Effect of mucosal and systemic immunization with virusâ€like particles of severe acute respiratory syndrome coronavirus in mice. Immunology, 2010, 130, 254-261.	2.0	84
57	The production of hemagglutininâ€based virusâ€like particles in plants: a rapid, efficient and safe response to pandemic influenza. Plant Biotechnology Journal, 2010, 8, 607-619.	4.1	319
58	Newcastle disease virus-like particles as a platform for the development of vaccines for human and agricultural pathogens. Future Virology, 2010, 5, 545-554.	0.9	20
59	Avian influenza pandemic preparedness: developing prepandemic and pandemic vaccines against a moving target. Expert Reviews in Molecular Medicine, 2010, 12, e14.	1.6	23
60	Delivery of Exogenous Antigens to Induce Cytotoxic CD8+ T Lymphocyte Responses. Journal of Biomedicine and Biotechnology, 2010, 2010, 1-10.	3.0	10
61	Egg-independent vaccine strategies for highly pathogenic H5N1 influenza viruses. Hum Vaccin, 2010, 6, 178-188.	2.4	52
62	Molecular vaccines for malaria. Hum Vaccin, 2010, 6, 54-77.	2.4	25
63	From the circumsporozoite protein to the RTS,S/AS candidate vaccine. Hum Vaccin, 2010, 6, 90-96.	2.4	217
64	Self-assembly of virus-like particles of porcine circovirus type 2 capsid protein expressed from Escherichia coli. Virology Journal, 2010, 7, 166.	1.4	70
65	Chitosan-based nanoparticles for improving immunization against hepatitis B infection. Vaccine, 2010, 28, 2607-2614.	1.7	157
66	Signal Analysis and Classification for Surface Plasmon Assisted Microscopy of Nanoobjects. Sensors and Actuators B: Chemical, 2010, 151, 281-290.	4.0	26
67	In planta production of plant-derived and non-plant-derived adjuvants. Expert Review of Vaccines, 2010, 9, 843-858.	2.0	39
68	Mucosal immunization: A realistic alternative. Hum Vaccin, 2010, 6, 978-1006.	2.4	42
69	Virus-like particles: innate immune stimulators. Expert Review of Vaccines, 2011, 10, 409-411.	2.0	20
70	Virus-Like Particles for Antigen Delivery at Mucosal Surfaces. Current Topics in Microbiology and Immunology, 2011, 354, 53-73.	0.7	22
71	Novel adjuvants and delivery systems for enhancing immune responses induced by immunogens. Expert Review of Vaccines, 2011, 10, 227-251.	2.0	56
72	Viruses and Virus-Like Particles in Biotechnology. , 2011, , 625-649.		10

#	Article	IF	Citations
73	Engineered Biological Entities for Drug Delivery and Gene Therapy. Progress in Molecular Biology and Translational Science, 2011, 104, 247-298.	0.9	10
74	The Art of Engineering Viral Nanoparticles. Molecular Pharmaceutics, 2011, 8, 29-43.	2.3	233
75	Large-scale production and purification of VLP-based vaccines. Journal of Invertebrate Pathology, 2011, 107, S42-S48.	1.5	201
76	Strong CD8+ T cell antigenicity and immunogenicity of large foreign proteins incorporated in HIV-1 VLPs able to induce a Nef-dependent activation/maturation of dendritic cells. Vaccine, 2011, 29, 3465-3475.	1.7	17
77	Influenza virus-like particle can accommodate multiple subtypes of hemagglutinin and protect from multiple influenza types and subtypes. Vaccine, 2011, 29, 5911-5918.	1.7	74
78	Chimeric severe acute respiratory syndrome coronavirus (SARS-CoV) S glycoprotein and influenza matrix 1 efficiently form virus-like particles (VLPs) that protect mice against challenge with SARS-CoV. Vaccine, 2011, 29, 6606-6613.	1.7	85
79	Current strategies for subunit and genetic viral veterinary vaccine development. Virus Research, 2011, 157, 1-12.	1.1	63
80	Vaccine Potential of Nipah Virus-Like Particles. PLoS ONE, 2011, 6, e18437.	1.1	58
81	CCL28 Induces Mucosal Homing of HIV-1-Specific IgA-Secreting Plasma Cells in Mice Immunized with HIV-1 Virus-Like Particles. PLoS ONE, 2011, 6, e26979.	1.1	28
83	Contraceptive Vaccines Based on the Zona Pellucida Glycoproteins for Dogs and Other Wildlife Population Management. American Journal of Reproductive Immunology, 2011, 66, 51-62.	1.2	16
84	Analytical features of particle counting sensor based on plasmon assisted microscopy of nano objects. Sensors and Actuators B: Chemical, 2011, 160, 1210-1215.	4.0	29
85	Bio-inspired, bioengineered and biomimetic drug delivery carriers. Nature Reviews Drug Discovery, 2011, 10, 521-535.	21.5	1,038
86	Baculovirus-Produced Influenza Virus-like Particles in Mammalian Cells Protect Mice from Lethal Influenza Challenge. Viral Immunology, 2011, 24, 311-319.	0.6	19
87	Influenza virosomes as a vaccine adjuvant and carrier system. Expert Review of Vaccines, 2011, 10, 437-446.	2.0	158
88	Expression of dengue-3 premembrane and envelope polyprotein in lettuce chloroplasts. Plant Molecular Biology, 2011, 76, 323-333.	2.0	60
89	Plant-made vaccines in support of the Millennium Development Goals. Plant Cell Reports, 2011, 30, 789-798.	2.8	56
90	Molecular and process design for rotavirus-like particle production in Saccharomyces cerevisiae. Microbial Cell Factories, 2011, 10, 33.	1.9	47
91	Viral nanoparticles and virusâ€like particles: platforms for contemporary vaccine design. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2011, 3, 174-196.	3.3	189

#	Article	IF	Citations
92	Light it up: Highly efficient multigene delivery in mammalian cells. BioEssays, 2011, 33, 946-955.	1.2	12
93	Assembly and characterization of lipidâ€“lipid binding protein particles. Journal of Biotechnology, 2011, 154, 60-67.	1.9	5
94	Efficient disulfide bond formation in virus-like particles. Journal of Biotechnology, 2011, 154, 230-239.	1.9	91
95	Production of Rous sarcoma virus-like particles displaying human transmembrane protein in silkworm larvae and its application to ligandâ€“receptor binding assay. Journal of Biotechnology, 2011, 155, 185-192.	1.9	12
97	Protein delivery using engineered virus-like particles. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 16998-17003.	3.3	181
98	Novel Immunologic Adjuvants. , 2011, , .		2
99	HIV-1 Gag-Virus-Like Particles Induce Natural Killer Cell Immune Responses via Activation and Maturation of Dendritic Cells. Journal of Innate Immunity, 2012, 4, 187-200.	1.8	11
100	HIV-1 Gag-Virus-Like Particles Inhibit HIV-1 Replication in Dendritic Cells and T Cells through IFN-a-Dependent Upregulation of APOBEC3G and 3F. Journal of Innate Immunity, 2012, 4, 579-590.	1.8	7
101	Virusâ€Like Particleâ€Based Countermeasures Against Rift Valley Fever Virus. Zoonoses and Public Health, 2012, 59, 142-150.	0.9	6
102	Virus-like particles as a highly efficient vaccine platform: Diversity of targets and production systems and advances in clinical development. Vaccine, 2012, 31, 58-83.	1.7	466
103	Role of T-cell epitope-based vaccine in prophylactic and therapeutic applications. Future Virology, 2012, 7, 1077-1088.	0.9	46
104	Production of Japanese encephalitis virus-like particles using the baculovirusâ€“insect cell system. Journal of Bioscience and Bioengineering, 2012, 114, 657-662.	1.1	27
105	Virus-like particles: The new frontier of vaccines for animal viral infections. Veterinary Immunology and Immunopathology, 2012, 148, 211-225.	0.5	117
107	Virus-like particles of hepatitis B virus core protein containing five mimotopes of infectious bursal disease virus (IBDV) protect chickens against IBDV. Vaccine, 2012, 30, 2125-2130.	1.7	34
108	Vaccination with coxsackievirus B3 virus-like particles elicits humoral immune response and protects mice against myocarditis. Vaccine, 2012, 30, 2301-2308.	1.7	38
109	Chimeric calicivirus-like particles elicit specific immune responses in pigs. Vaccine, 2012, 30, 2427-2439.	1.7	36
110	Improvement of the PapMV nanoparticle adjuvant property through an increased of its avidity for the antigen [influenza NP]. Vaccine, 2012, 30, 2535-2542.	1.7	21
111	High-yield and scalable cell-free assembly of virus-like particles by dilution. Biochemical Engineering Journal, 2012, 67, 88-96.	1.8	33

#	Article	IF	Citations
112	Stability studies of HIV-1 Pr55gagvirus-like particles made in insect cells after storage in various formulation media. Virology Journal, 2012, 9, 210.	1.4	37
115	Serological cross-reactions between four polyomaviruses of birds using virus-like particles expressed in yeast. Journal of General Virology, 2012, 93, 2658-2667.	1.3	8
117	Virus-like particles: potential veterinary vaccine immunogens. Research in Veterinary Science, 2012, 93, 553-559.	0.9	72
118	HSV-1 Amplicon Vectors Launch the Production of Heterologous Rotavirus-like Particles and Induce Rotavirus-specific Immune Responses in Mice. Molecular Therapy, 2012, 20, 1810-1820.	3.7	25
119	Characterization of porcine circovirus type 2 (PCV2) capsid particle assembly and its application to virus-like particle vaccine development. Applied Microbiology and Biotechnology, 2012, 95, 1501-1507.	1.7	58
120	Nanotechnology in Vaccine Development. Proceedings of the National Academy of Sciences India Section B - Biological Sciences, 2012, 82, 13-27.	0.4	8
121	Expression of human papillomavirus 6b L1 protein in silkworm larvae and enhanced green fluorescent protein displaying on its virus-like particles. SpringerPlus, 2012, 1, 29.	1.2	8
122	Novel Viral Vectored Vaccines for the Prevention of Influenza. Molecular Medicine, 2012, 18, 1153-1160.	1.9	24
123	Liposomes and nanotechnology in drug development: focus on oncotargets. International Journal of Nanomedicine, 2012, 7, 4943.	3.3	29
124	Dengue virus-like particles: construction and application. Applied Microbiology and Biotechnology, 2012, 94, 39-46.	1.7	16
125	Interaction of nanoparticles with immunocompetent cells: nanosafety considerations. Nanomedicine, 2012, 7, 121-131.	1.7	100
126	Robust IgG responses to nanograms of antigen using a biomimetic lipid-coated particle vaccine. Journal of Controlled Release, 2012, 157, 354-365.	4.8	93
127	Targeting tumor antigens to dendritic cells using particulate carriers. Journal of Controlled Release, 2012, 161, 25-37.	4.8	174
128	Effects of adjuvants on IgG subclasses elicited by virus-like Particles. Journal of Translational Medicine, 2012, 10, 4.	1.8	66
129	Foot-and-mouth disease virus-like particles produced by a SUMO fusion protein system in Escherichia coli induce potent protective immune responses in guinea pigs, swine and cattle. Veterinary Research, 2013, 44, 48.	1.1	80
130	H5N1 vaccines in humans. Virus Research, 2013, 178, 78-98.	1.1	83
131	Influenza virosomes as vaccine adjuvant and carrier system. Expert Review of Vaccines, 2013, 12, 779-791.	2.0	108
132	Epitope engineering and molecular metrics of immunogenicity: A computational approach to VLP-based vaccine design. Vaccine, 2013, 31, 4841-4847.	1.7	15

#	Article	IF	Citations
133	Biomimetic Protein Nanoparticles Facilitate Enhanced Dendritic Cell Activation and Cross-Presentation. ACS Nano, 2013, 7, 9743-9752.	7.3	122
134	Purification of hepatitis B surface antigen virus-like particles from recombinant Pichia pastoris and in vivo analysis of their immunogenic properties. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2013, 940, 104-111.	1.2	49
135	HIV-derived lentiviral particles promote T-cell independent activation and differentiation of naÃ¯ve cognate conventional B2-cells in vitro. Vaccine, 2013, 31, 5088-5098.	1.7	14
136	Assembly and immunological properties of a bivalent virus-like particle (VLP) for avian influenza and Newcastle disease. Virus Research, 2013, 178, 430-436.	1.1	18
137	Adjuvant Strategies for Vaccines. , 2013, , 333-349.		4
138	Membrane Supported Virus Separation from Biological Solutions. Chemie-Ingenieur-Technik, 2013, 85, 1183-1192.	0.4	13
139	Virus-like particle-based vaccines for animal viral infections. Inmunologia (Barcelona, Spain: 1987), 2013, 32, 102-116.	0.1	18
140	Plant-derived virus-like particles as vaccines. Human Vaccines and Immunotherapeutics, 2013, 9, 26-49.	1.4	137
141	Biomimetic Antigenic Nanoparticles Elicit Controlled Protective Immune Response to Influenza. ACS Nano, 2013, 7, 3036-3044.	7.3	98
142	Mapping in vitro local material properties of intact and disrupted virions at high resolution using multi-harmonic atomic force microscopy. Nanoscale, 2013, 5, 4729.	2.8	48
143	A bioâ€nanocapsule containing envelope protein domain <scp>III</scp> of Japanese encephalitis virus protects mice against lethal Japanese encephalitis virus infection. Microbiology and Immunology, 2013, 57, 470-477.	0.7	8
144	Design of Novel Vaccines Based on Virus-Like Particles or Chimeric Virions. Sub-Cellular Biochemistry, 2013, 68, 631-665.	1.0	30
145	Virus-like particles: Promising platforms with characteristics of DIVA for veterinary vaccine design. Comparative Immunology, Microbiology and Infectious Diseases, 2013, 36, 343-352.	0.7	26
146	RNA Replicon Delivery via Lipid-Complexed PRINT Protein Particles. Molecular Pharmaceutics, 2013, 10, 3366-3374.	2.3	43
147	Recent Advances in Mucosal Immunization Using Virus-like Particles. Molecular Pharmaceutics, 2013, 10, 1596-1609.	2.3	23
148	Epitope Fluctuations in the Human Papillomavirus Are Under Dynamic Allosteric Control: A Computational Evaluation of a New Vaccine Design Strategy. Journal of the American Chemical Society, 2013, 135, 18458-18468.	6.6	19
149	Newcastle Disease Virusâ€Like Particles: Preparation, Purification, Quantification, and Incorporation of Foreign Glycoproteins. Current Protocols in Microbiology, 2013, 30, 18.2.1-18.2.21.	6.5	26
150	Efficient production of Japanese encephalitis virus-like particles by recombinant lepidopteran insect cells. Applied Microbiology and Biotechnology, 2013, 97, 1071-1079.	1.7	20

#	Article	IF	Citations
151	Colloidal Drug Delivery Systems in Vaccine Delivery. Current Drug Targets, 2013, 14, 123-137.	1.0	30
152	Subunit and Virus-Like Particle Vaccine Approaches for Respiratory Syncytial Virus. Current Topics in Microbiology and Immunology, 2013, 372, 285-306.	0.7	18
153	Fluorosomes: Fluorescent Virus-Like Nanoparticles that Represent a Convenient Tool to Visualize Receptor-Ligand Interactions. Sensors, 2013, 13, 8722-8749.	2.1	13
154	Malaria Vaccine Adjuvants: Latest Update and Challenges in Preclinical and Clinical Research. BioMed Research International, 2013, 2013, 1-19.	0.9	35
155	Vaccine delivery system for tuberculosis based on nano-sized hepatitis B virus core protein particles. International Journal of Nanomedicine, 2013, 8, 835.	3.3	26
156	Production of Japanese encephalitis virus-like particles in insect cells. Bioengineered, 2013, 4, 438-442.	1.4	19
157	Vaccine delivery using nanoparticles. Frontiers in Cellular and Infection Microbiology, 2013, 3, 13.	1.8	402
158	A Plant-Produced Pfs25 VLP Malaria Vaccine Candidate Induces Persistent Transmission Blocking Antibodies against Plasmodium falciparum in Immunized Mice. PLoS ONE, 2013, 8, e79538.	1.1	92
161	Nanotechnology in Vaccine Delivery. , 2014, , 727-741.		4
162	Universal Influenza Vaccines, a Dream to Be Realized Soon. Viruses, 2014, 6, 1974-1991.	1.5	60
163	Virus-like particles as antigenic nanomaterials for inducing protective immune responses in the lung. Nanomedicine, 2014, 9, 1857-1868.	1.7	37
164	Secreted production of assembled Norovirus virus-like particles from Pichia pastoris. Microbial Cell Factories, 2014, 13, 134.	1.9	27
166	Self-assembly of virus-like particles of canine parvovirus capsid protein expressed from Escherichia coli and application as virus-like particle vaccine. Applied Microbiology and Biotechnology, 2014, 98, 3529-3538.	1.7	42
167	Viral vaccines for farmed finfish. VirusDisease, 2014, 25, 1-17.	1.0	113
168	Current concepts and progress in RSV vaccine development. Expert Review of Vaccines, 2014, 13, 333-344.	2.0	44
169	Suitability and perspectives on using recombinant insect cells for the production of virus-like particles. Applied Microbiology and Biotechnology, 2014, 98, 1963-1970.	1.7	25
170	Rabies virus-like particles expressed in HEK293 cells. Vaccine, 2014, 32, 2799-2804.	1.7	35
171	Virus-like particles in picornavirus vaccine development. Applied Microbiology and Biotechnology, 2014, 98, 4321-4329.	1.7	14

#	Article	IF	Citations
172	Coxsackievirus B3 VLPs purified by ion exchange chromatography elicit strong immune responses in mice. Antiviral Research, 2014, 104, 93-101.	1.9	37
173	Nanoparticles and antigen delivery: understanding the benefits and drawbacks of different delivery platforms. Nanomedicine, 2014, 9, 373-376.	1.7	9
174	Nanoparticle vaccines. Vaccine, 2014, 32, 327-337.	1.7	737
175	Second-generation prophylactic HPV vaccines: successes and challenges. Expert Review of Vaccines, 2014, 13, 247-255.	2.0	28
176	Update on the development of enterovirus 71 vaccines. Expert Opinion on Biological Therapy, 2014, 14, 1455-1464.	1.4	35
177	Budding of peste des petits ruminants virus-like particles from insect cell membrane based on intracellular co-expression of peste des petits ruminants virus M, H and N proteins by recombinant baculoviruses. Journal of Virological Methods, 2014, 207, 78-85.	1.0	11
178	Functionalization of protein-based nanocages for drug delivery applications. Nanoscale, 2014, 6, 7124-7141.	2.8	153
179	A novel method to produce Influenza A virus matrix protein M1 Capsid Like Particles (CLPs). Journal of Virological Methods, 2014, 205, 1-2.	1.0	2
180	Plantâ€produced viral bovine vaccines: what happened during the last 10Âyears?. Plant Biotechnology Journal, 2015, 13, 1071-1077.	4.1	18
181	Approaching rational epitope vaccine design for hepatitis C virus with meta-server and multivalent scaffolding. Scientific Reports, 2015, 5, 12501.	1.6	68
182	Viral vaccines and their manufacturing cell substrates: New trends and designs in modern vaccinology. Biotechnology Journal, 2015, 10, 1329-1344.	1.8	47
183	Non-Carrier Nanoparticles Adjuvant Modular Protein Vaccine in a Particle-Dependent Manner. PLoS ONE, 2015, 10, e0117203.	1.1	18
184	Head-to-Head Comparison of Soluble vs. QÎ² VLP Circumsporozoite Protein Vaccines Reveals Selective Enhancement of NANP Repeat Responses. PLoS ONE, 2015, 10, e0142035.	1.1	33
185	The development of a recombinant hepatitis E vaccine HEV 239. Human Vaccines and Immunotherapeutics, 2015, 11, 908-914.	1.4	99
186	Lessons learned from successful human vaccines: Delineating key epitopes by dissecting the capsid proteins. Human Vaccines and Immunotherapeutics, 2015, 11, 1277-1292.	1.4	39
187	The potential of nanoparticles for the immunization against viral infections. Journal of Materials Chemistry B, 2015, 3, 4767-4779.	2.9	45
188	Intranasal and oral vaccination with protein-based antigens: advantages, challenges and formulation strategies. Protein and Cell, 2015, 6, 480-503.	4.8	115
189	Long-Term Reduction of High Blood Pressure by Angiotensin II DNA Vaccine in Spontaneously Hypertensive Rats. Hypertension, 2015, 66, 167-174.	1.3	37

#	Article	IF	Citations
190	Generation and characterization of a trackable plant-made influenza H5 virus-like particle (VLP) containing enhanced green fluorescent protein (eGFP). FASEB Journal, 2015, 29, 3817-3827.	0.2	14
191	Synthetic biology devices for in vitro and in vivo diagnostics. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14429-14435.	3.3	281
192	Symmetry Controlled, Genetic Presentation of Bioactive Proteins on the P22 Virus-like Particle Using an External Decoration Protein. ACS Nano, 2015, 9, 9134-9147.	7.3	66
193	Chimeric Virus-Like Particles Made Using GAG and M1 Capsid Proteins Providing Dual Drug Delivery and Vaccination Platform. Molecular Pharmaceutics, 2015, 12, 839-845.	2.3	29
194	Immunogenicity of H1N1 influenza virus-like particles produced inNicotiana benthamiana. Human Vaccines and Immunotherapeutics, 2015, 11, 118-123.	1.4	21
195	Advances and challenges in the development and production of effective plant-based influenza vaccines. Expert Review of Vaccines, 2015, 14, 519-535.	2.0	25
196	Development of virusâ€like particles for diagnostic and prophylactic biomedical applications. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2015, 7, 722-735.	3.3	65
197	Protein transfer-mediated surface engineering to adjuvantate virus-like nanoparticles for enhanced anti-viral immune responses. Nanomedicine: Nanotechnology, Biology, and Medicine, 2015, 11, 1097-1107.	1.7	20
198	Assessing stability and assembly of the hepatitis B surface antigen into virus-like particles during down-stream processing. Vaccine, 2015, 33, 3739-3745.	1.7	23
199	Capture-stabilize approach for membrane protein SPR assays. Scientific Reports, 2014, 4, 7360.	1.6	26
200	Lessons from hepatitis E vaccine design. Current Opinion in Virology, 2015, 11, 130-136.	2.6	27
201	Immunogenic virus-like particles continuously expressed in mammalian cells as a veterinary rabies vaccine candidate. Vaccine, 2015, 33, 4238-4246.	1.7	41
202	Perspective of Peptide Vaccine Composed of Epitope Peptide, CpG-DNA, and Liposome Complex Without Carriers. Advances in Protein Chemistry and Structural Biology, 2015, 99, 75-97.	1.0	9
203	Computational tools for epitope vaccine design and evaluation. Current Opinion in Virology, 2015, 11, 103-112.	2.6	60
204	Negative chromatography purification of hepatitis B virus-like particles using poly(oligo(ethylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	1.8	22
205	Virus-Based Nanoparticles as Versatile Nanomachines. Annual Review of Virology, 2015, 2, 379-401.	3.0	136
206	Application of surface plasmon resonance imaging technique for the detection of single spherical biological submicrometer particles. Analytical Biochemistry, 2015, 486, 62-69.	1.1	34
207	The application of virus-like particles as vaccines and biological vehicles. Applied Microbiology and Biotechnology, 2015, 99, 10415-10432.	1.7	82

#	Article	IF	Citations
208	VLP production in Leishmania tarentolae : A novel expression system for purification and assembly of HPV16 L1. Protein Expression and Purification, 2015, 116, 7-11.	0.6	17
209	Multi-enveloping of particulated antigens with biopolymers and immunostimulant polynucleotides. Journal of Drug Delivery Science and Technology, 2015, 30, 424-434.	1.4	14
210	Structural Basis for the Development of Avian Virus Capsids That Display Influenza Virus Proteins and Induce Protective Immunity. Journal of Virology, 2015, 89, 2563-2574.	1.5	20
211	Quantifying Lipid Contents in Enveloped Virus Particles with Plasmonic Nanoparticles. Small, 2015, 11, 1592-1602.	5.2	13
212	Formation of self-assembled triple-layered rotavirus-like particles (tlRLPs) by constitutive co-expression of VP2, VP6, and VP7 in stably transfected high-five insect cell lines. Journal of Medical Virology, 2015, 87, 102-111.	2.5	15
213	Efficient Encapsulation of Fe₃O₄ Nanoparticles into Genetically Engineered Hepatitis B Core Virusâ€Like Particles Through a Specific Interaction for Potential Bioapplications. Small, 2015, 11, 1190-1196.	5.2	59
214	Enabling Vaccine Delivery Platforms and Adjuvants for Malaria. , 0, , .		1
215	Innovation of a New Virus-Like Nanoparticle Vaccine System for the Specific Aerosol Relative Disease. Aerosol and Air Quality Research, 2016, 16, 2421-2427.	0.9	3
216	A Comparison Study of iTEP Nanoparticle-Based CTL Vaccine Carriers Revealed a Surprise Relationship between the Stability and Efficiency of the Carriers. Theranostics, 2016, 6, 666-678.	4.6	11
217	Current Advances in Virus-Like Particles as a Vaccination Approach against HIV Infection. Vaccines, 2016, 4, 2.	2.1	17
218	Effective Delivery of Antigenâ€“Encapsulin Nanoparticle Fusions to Dendritic Cells Leads to Antigen-Specific Cytotoxic T Cell Activation and Tumor Rejection. ACS Nano, 2016, 10, 7339-7350.	7.3	84
219	Nanostructural characterization of Sf9 cells during virusâ€like particles generation. Scanning, 2016, 38, 735-742.	0.7	3
220	Regulation of porcine circovirus type 2-like particles expressed in baculovirus expression system. Bioresources and Bioprocessing, 2016, 3, .	2.0	3
221	Whole-Inactivated and Virus-Like Particle Vaccine Strategies for Chikungunya Virus. Journal of Infectious Diseases, 2016, 214, S497-S499.	1.9	33
222	Artificial cells: from basic science to applications. Materials Today, 2016, 19, 516-532.	8.3	256
223	Subunit Protein Vaccine Delivery System for Tuberculosis Based on Hepatitis B Virus Core VLP (HBc-VLP) Particles. Methods in Molecular Biology, 2016, 1404, 377-392.	0.4	11
224	Production of Japanese Encephalitis Virus-Like Particles Using Insect Cell Expression Systems. Methods in Molecular Biology, 2016, 1404, 365-375.	0.4	5
225	Vaccine technologies: From whole organisms to rationally designed protein assemblies. Biochemical Pharmacology, 2016, 120, 1-14.	2.0	200

#	Article	IF	Citations
226	Self-assembly of virus-like particles of rabbit hemorrhagic disease virus capsid protein expressed in Escherichia coli and their immunogenicity in rabbits. Antiviral Research, 2016, 131, 85-91.	1.9	20
227	An optimized, highly efficient, self-assembled, subvirus-like particle of infectious bursal disease virus (IBDV). Vaccine, 2016, 34, 3508-3514.	1.7	15
228	Bioorthogonal Strategy for Bioprocessing of Specific-Site-Functionalized Enveloped Influenza-Virus-Like Particles. Bioconjugate Chemistry, 2016, 27, 2386-2399.	1.8	17
229	A shared N-terminal hydrophobic tail for the formation of nanoparticulates. Nanomedicine, 2016, 11, 2289-2303.	1.7	5
230	Modular virus-like particles for sublingual vaccination against group A streptococcus. Vaccine, 2016, 34, 6472-6480.	1.7	17
231	A Modular Vaccine Development Platform Based on Sortase-Mediated Site-Specific Tagging of Antigens onto Virus-Like Particles. Scientific Reports, 2016, 6, 25741.	1.6	33
232	Viruslike Particles Encapsidating Respiratory Syncytial Virus M and M2 Proteins Induce Robust T Cell Responses. ACS Biomaterials Science and Engineering, 2016, 2, 2324-2332.	2.6	50
233	Vaccination against respiratory syncytial virus in pregnancy: a suitable tool to combat global infant morbidity and mortality?. Lancet Infectious Diseases, The, 2016, 16, e153-e163.	4.6	53
234	Synthesis of empty african horse sickness virus particles. Virus Research, 2016, 213, 184-194.	1.1	17
235	Central nervous system-specific consequences of simian immunodeficiency virus Gag escape from major histocompatibility complex class I-mediated control. Journal of NeuroVirology, 2016, 22, 498-507.	1.0	10
236	Structural analysis and insertion study reveal the ideal sites for surface displaying foreign peptides on a betanodavirus-like particle. Veterinary Research, 2016, 47, 16.	1.1	27
237	Self-assembling protein nanoparticles in the design of vaccines. Computational and Structural Biotechnology Journal, 2016, 14, 58-68.	1.9	266
238	Development of a porcine reproductive and respiratory syndrome virus-like-particle-based vaccine and evaluation of its immunogenicity in pigs. Archives of Virology, 2016, 161, 1579-1589.	0.9	18
239	Design of nanomaterial based systems for novel vaccine development. Biomaterials Science, 2016, 4, 785-802.	2.6	52
240	Transient Bluetongue virus serotype 8 capsid protein expression in Nicotiana benthamiana. Biotechnology Reports (Amsterdam, Netherlands), 2016, 9, 15-24.	2.1	15
241	Molecular pharming â€" VLPs made in plants. Current Opinion in Biotechnology, 2016, 37, 201-206.	3.3	128
242	Downstream process development strategies for effective bioprocesses: Trends, progress, and combinatorial approaches. Engineering in Life Sciences, 2017, 17, 1142-1158.	2.0	45
243	Integrated analysis of recombinant BPV-1 L1 protein for the production of a bovine papillomavirus VLP vaccine. Vaccine, 2017, 35, 1590-1593.	1.7	10

#	Article	IF	Citations
245	Plant-expressed Hepatitis B core antigen virus-like particles: Characterization and investigation of their stability in simulated and pig gastro-intestinal fluids. International Journal of Pharmaceutics, 2017, 522, 147-156.	2.6	11
246	Betanodavirus-like particles enter host cells via clathrin-mediated endocytosis in a cholesterol-, pH- and cytoskeleton-dependent manner. Veterinary Research, 2017, 48, 8.	1.1	26
247	Nanotechnology based therapeutic modality to boost anti-tumor immunity and collapse tumor defense. Journal of Controlled Release, 2017, 256, 26-45.	4.8	41
248	Biomedical and Catalytic Opportunities of Virus-Like Particles in Nanotechnology. Advances in Virus Research, 2017, 97, 1-60.	0.9	82
249	Novel chimeric virus-like particles vaccine displaying MERS-CoV receptor-binding domain induce specific humoral and cellular immune response in mice. Antiviral Research, 2017, 140, 55-61.	1.9	79
250	Design and evaluation of the immunogenicity and efficacy of a biomimetic particulate formulation of viral antigens. Scientific Reports, 2017, 7, 13743.	1.6	24
251	Plant-made polio type 3 stabilized VLPsâ€"a candidate synthetic polio vaccine. Nature Communications, 2017, 8, 245.	5.8	91
252	Rotavirus virusâ€like particles (RVâ€VLPs) vaccines: An update. Reviews in Medical Virology, 2017, 27, e1954.	3.9	18
253	DNA-Loaded Cationic Liposomes Efficiently Function as a Vaccine against Malarial Proteins. Molecular Therapy - Methods and Clinical Development, 2017, 7, 1-10.	1.8	24
254	Cell-permeable capsids as universal antigen carrier for the induction of an antigen-specific CD8+ T-cell response. Scientific Reports, 2017, 7, 9630.	1.6	13
255	A VLP-based vaccine provides complete protection against Nipah virus challenge following multiple-dose or single-dose vaccination schedules in a hamster model. Npj Vaccines, 2017, 2, 21.	2.9	54
256	Physalis Mottle Virus-Like Particles as Nanocarriers for Imaging Reagents and Drugs. Biomacromolecules, 2017, 18, 4141-4153.	2.6	63
257	Cell wall biochemical alterations during Agrobacteriumâ€mediated expression of haemagglutininâ€based influenza virusâ€like vaccine particles in tobacco. Plant Biotechnology Journal, 2017, 15, 285-296.	4.1	12
258	Nanoparticle-based B-cell targeting vaccines: Tailoring of humoral immune responses by functionalization with different TLR-ligands. Nanomedicine: Nanotechnology, Biology, and Medicine, 2017, 13, 173-182.	1.7	37
259	Targeted cowpea chlorotic mottle virus-based nanoparticles with tumor-homing peptide F3 for photothermal therapy. Biotechnology and Bioprocess Engineering, 2017, 22, 700-708.	1.4	8
260	Viruses and Virus-Like Particles in Biotechnology: Fundamentals and Applications. , 2017, , 633-656.		13
261	Application of the PAMONO-Sensor for Quantiï¬cation of Microvesicles and Determination of Nano-Particle Size Distribution. Sensors, 2017, 17, 244.	2.1	23
262	Modularized peptides modified HBc virus-like particles for encapsulation and tumor-targeted delivery of doxorubicin. Nanomedicine: Nanotechnology, Biology, and Medicine, 2018, 14, 725-734.	1.7	45

#	Article	IF	Citations
263	Enhanced stability of a chimeric hepatitis B core antigen virus-like-particle (HBcAg-VLP) by a C-terminal linker-hexahistidine-peptide. Journal of Nanobiotechnology, 2018, 16, 39.	4.2	23
264	Large-Scale Transient Transfection of Suspension Mammalian Cells for VLP Production. Methods in Molecular Biology, 2018, 1674, 117-127.	0.4	7
265	Biological information systems: Evolution as cognition-based information management. Progress in Biophysics and Molecular Biology, 2018, 134, 1-26.	1.4	53
266	Progress Toward the Clinical Translation of Bioinspired Peptide and Protein Assemblies. Advanced Healthcare Materials, 2018, 7, 1700930.	3.9	32
267	A virus-like particle of the hepatitis B virus preS antigen elicits robust neutralizing antibodies and T cell responses in mice. Antiviral Research, 2018, 149, 48-57.	1.9	22
268	Monoclonal antibodies: technologies for early discovery and engineering. Critical Reviews in Biotechnology, 2018, 38, 394-408.	5.1	61
269	Protein Cage Nanoparticles as Delivery Nanoplatforms. Advances in Experimental Medicine and Biology, 2018, 1064, 27-43.	0.8	24
270	Nanoparticle Vaccines Against Infectious Diseases. Frontiers in Immunology, 2018, 9, 2224.	2.2	347
271	Nanoparticles for Immune Stimulation Against Infection, Cancer, and Autoimmunity. ACS Nano, 2018, 12, 10621-10635.	7.3	79
272	Biomedical Applications of Lumazine Synthase. Journal of Pharmaceutical Sciences, 2018, 107, 2283-2296.	1.6	17
273	Overexpression of a virus-like particle influenza vaccine in Eri silkworm pupae, using Autographa californica nuclear polyhedrosis virus and host-range expansion. Archives of Virology, 2018, 163, 2787-2797.	0.9	4
274	Induction of adaptive immune response by self-aggregating peptides. Expert Review of Vaccines, 2018, 17, 723-738.	2.0	9
275	Establishment of a yeast-based VLP platform for antigen presentation. Microbial Cell Factories, 2018, 17, 17.	1.9	49
276	Genotype I of Japanese Encephalitis Virus Virus-like Particles Elicit Sterilizing Immunity against Genotype I and III Viral Challenge in Swine. Scientific Reports, 2018, 8, 7481.	1.6	15
277	Safety and immunogenicity of a plant-produced Pfs25 virus-like particle as a transmission blocking vaccine against malaria: A Phase 1 dose-escalation study in healthy adults. Vaccine, 2018, 36, 5865-5871.	1.7	89
278	High-level expression and enrichment of norovirus virus-like particles in plants using modified geminiviral vectors. Protein Expression and Purification, 2018, 151, 86-92.	0.6	33
279	Production of HIV-1-based virus-like particles for vaccination: achievements and limits. Applied Microbiology and Biotechnology, 2019, 103, 7367-7384.	1.7	30
280	Biomineralization synthesis of HBc-CuS nanoparticles for near-infrared light-guided photothermal therapy. Journal of Materials Science, 2019, 54, 13255-13264.	1.7	18

#	Article	IF	Citations
281	Expression of Breast Cancer-Related Epitopes Targeting the IGF-1 Receptor in Chimeric Human Parvovirus B19 Virus-Like Particles. Molecular Biotechnology, 2019, 61, 742-753.	1.3	14
282	The Pupal Ectoparasitoid Pachycrepoideus vindemmiae Regulates Cellular and Humoral Immunity of Host Drosophila melanogaster. Frontiers in Physiology, 2019, 10, 1282.	1.3	19
283	Recent Advances in Nanovaccines Using Biomimetic Immunomodulatory Materials. Pharmaceutics, 2019, 11, 534.	2.0	74
284	Bioprocess optimization for purification of chimeric VLP displaying BVDV E2 antigens produced in yeast Hansenula polymorpha. Journal of Biotechnology, 2019, 306, 203-212.	1.9	11
285	Elongated Flexuous Plant Virus-Derived Nanoparticles Functionalized for Autoantibody Detection. Nanomaterials, 2019, 9, 1438.	1.9	12
286	Nipah Virus-Like Particle Egress Is Modulated by Cytoskeletal and Vesicular Trafficking Pathways: a Validated Particle Proteomics Analysis. MSystems, 2019, 4, .	1.7	11
287	Chimeric Murine Polyomavirus Virus-Like Particles Induce Plasmodium Antigen-Specific CD8+ T Cell and Antibody Responses. Frontiers in Cellular and Infection Microbiology, 2019, 9, 215.	1.8	11
288	The Utilization of Cell-Penetrating Peptides in the Intracellular Delivery of Viral Nanoparticles. Materials, 2019, 12, 2671.	1.3	23
289	Vaccine Development against the Renin-Angiotensin System for the Treatment of Hypertension. International Journal of Hypertension, 2019, 2019, 1-8.	0.5	6
290	Display of malaria transmission-blocking antigens on chimeric duck hepatitis B virus-derived virus-like particles produced in Hansenula polymorpha. PLoS ONE, 2019, 14, e0221394.	1.1	14
291	Malaria vaccine candidates displayed on novel virus-like particles are immunogenic and induce transmission-blocking activity. PLoS ONE, 2019, 14, e0221733.	1.1	21
292	African Horse Sickness: A Review of Current Understanding and Vaccine Development. Viruses, 2019, 11, 844.	1.5	47
293	Production and characterization of Hantaan virus-like particles from baculovirus expression system. Biochemical Engineering Journal, 2019, 152, 107373.	1.8	3
294	Efficient oral vaccination by bioengineering virus-like particles with protozoan surface proteins. Nature Communications, 2019, 10, 361.	5.8	70
295	Plant-Made Nervous Necrosis Virus-Like Particles Protect Fish Against Disease. Frontiers in Plant Science, 2019, 10, 880.	1.7	27
296	Current and Novel Approaches in Influenza Management. Vaccines, 2019, 7, 53.	2.1	14
297	Purification of flavivirus VLPs by a two-step chomatographic process. Vaccine, 2019, 37, 7061-7069.	1.7	21
298	Unidirectional Presentation of Membrane Proteins in Nanoparticleâ€Supported Liposomes. Angewandte Chemie, 2019, 131, 9971-9975.	1.6	0

#	Article	IF	Citations
299	Rabies-based vaccine induces potent immune responses against Nipah virus. Npj Vaccines, 2019, 4, 15.	2.9	28
300	Unidirectional Presentation of Membrane Proteins in Nanoparticleâ€Supported Liposomes. Angewandte Chemie - International Edition, 2019, 58, 9866-9870.	7.2	9
301	Trapped! A Critical Evaluation of Methods for Measuring Total Cellular Uptake versus Cytosolic Localization. Bioconjugate Chemistry, 2019, 30, 1006-1027.	1.8	53
302	Identification of a human respiratory syncytial virus phosphoprotein domain required for virus-like-particle formation. Virology, 2019, 532, 48-54.	1.1	4
303	Clinical Applications of Virus-like Particles: Opportunities and Challenges. Current Protein and Peptide Science, 2019, 20, 488-489.	0.7	3
304	A Review of Fish Vaccine Development Strategies: Conventional Methods and Modern Biotechnological Approaches. Microorganisms, 2019, 7, 569.	1.6	196
305	Plant-produced chimeric virus-like particles - a new generation vaccine against African horse sickness. BMC Veterinary Research, 2019, 15, 432.	0.7	12
306	Application of some nanoparticles in the field of veterinary medicine. International Journal of Veterinary Science and Medicine, 2019, 7, 78-93.	0.8	69
307	Cold chain and virusâ€free oral polio booster vaccine made in lettuce chloroplasts confers protection against all three poliovirus serotypes. Plant Biotechnology Journal, 2019, 17, 1357-1368.	4.1	52
308	Synthetic biology for bioengineering virusâ€like particle vaccines. Biotechnology and Bioengineering, 2019, 116, 919-935.	1.7	66
309	Chimaeric Rift Valley Fever Virusâ€Like Particle Vaccine Candidate Production inNicotiana benthamiana. Biotechnology Journal, 2019, 14, 1800238.	1.8	11
310	Crude extracts of recombinant baculovirus expressing rabbit hemorrhagic disease virus 2 VLPs from both insect and rabbit cells protect rabbits from rabbit hemorrhagic disease caused by RHDV2. Archives of Virology, 2019, 164, 137-148.	0.9	10
311	Advanced applications of nanotechnology in veterinary medicine. Environmental Science and Pollution Research, 2020, 27, 19073-19086.	2.7	62
312	Functional Characterization of a Venom Protein Calreticulin in the Ectoparasitoid Pachycrepoideus vindemiae. Insects, 2020, 11, 29.	1.0	6
313	Progress in the development of virus-like particle vaccines against respiratory viruses. Expert Review of Vaccines, 2020, 19, 11-24.	2.0	13
314	Nanoparticles in influenza subunit vaccine development: Immunogenicity enhancement. Influenza and Other Respiratory Viruses, 2020, 14, 92-101.	1.5	43
315	Nanoparticles and Vaccine Development. Pharmaceutical Nanotechnology, 2020, 8, 6-21.	0.6	100
316	Virus like particles: fundamental concepts, biological interactions, and clinical applications. , 2020, , 153-174.		10

#	Article	IF	Citations
317	Zinc and Copper Ions Differentially Regulate Prion-Like Phase Separation Dynamics of Pan-Virus Nucleocapsid Biomolecular Condensates. Viruses, 2020, 12, 1179.	1.5	34
318	The immunogenicity of the virus-like particles derived from the VP2 protein of porcine parvovirus. Veterinary Microbiology, 2020, 248, 108795.	0.8	4
319	Perspectives in Peptide-Based Vaccination Strategies for Syndrome Coronavirus 2 Pandemic. Frontiers in Pharmacology, 2020, 11, 578382.	1.6	38
320	Development of immunogenic chimeric virus-like particles based on bovine papillomavirus type 6. Vaccine, 2020, 38, 7774-7779.	1.7	2
321	Progress in the Production of Virus-Like Particles for Vaccination against Hepatitis E Virus. Viruses, 2020, 12, 826.	1.5	10
322	Adjuvant formulated virus-like particles expressing native-like forms of the Lassa virus envelope surface glycoprotein are immunogenic and induce antibodies with broadly neutralizing activity. Npj Vaccines, 2020, 5, 71.	2.9	21
323	Cellular and humoral immune interactions between Drosophila and its parasitoids. Insect Science, 2021, 28, 1208-1227.	1.5	29
324	Construction of SARS-CoV-2 Virus-Like Particles by Mammalian Expression System. Frontiers in Bioengineering and Biotechnology, 2020, 8, 862.	2.0	119
325	Rabies VLPs adjuvanted with saponin-based liposomes induce enhanced immunogenicity mediated by neutralizing antibodies in cattle, dogs and cats. Journal of Virological Methods, 2020, 286, 113966.	1.0	8
326	Emerging Concepts and Technologies in Vaccine Development. Frontiers in Immunology, 2020, 11, 583077.	2.2	159
327	Recent Advances in the Development of Virus-Like Particle-Based Flavivirus Vaccines. Vaccines, 2020, 8, 481.	2.1	10
328	Biosynthesis of Selfâ€Assembled Proteinaceous Nanoparticles for Vaccination. Advanced Materials, 2020, 32, e2002940.	11.1	50
329	A venom protein, Kazalâ€type serine protease inhibitor, of ectoparasitoid Pachycrepoideus vindemiae inhibits the hemolymph melanization of host Drosophila melanogaster. Archives of Insect Biochemistry and Physiology, 2020, 105, e21736.	0.6	5
330	Antiviral Potential of Nanoparticlesâ€"Can Nanoparticles Fight Against Coronaviruses?. Nanomaterials, 2020, 10, 1645.	1.9	162
331	Antiviral therapy for the sexually transmitted viruses: recent updates on vaccine development. Expert Review of Clinical Pharmacology, 2020, 13, 1001-1046.	1.3	7
332	Nano-Biomimetic Drug Delivery Vehicles: Potential Approaches for COVID-19 Treatment. Molecules, 2020, 25, 5952.	1.7	29
333	Recombinant Lactococcus Expressing a Novel Variant of Infectious Bursal Disease Virus VP2 Protein Can Induce Unique Specific Neutralizing Antibodies in Chickens and Provide Complete Protection. Viruses, 2020, 12, 1350.	1.5	6
334	Safety Profile of a Virus-Like Particle-Based Vaccine Targeting Self-Protein Interleukin-5 in Horses. Vaccines, 2020, 8, 213.	2.1	12

#	Article	IF	Citations
335	Cell Membrane-Based Biomimetic Nanoparticles and the Immune System: Immunomodulatory Interactions to Therapeutic Applications. Frontiers in Bioengineering and Biotechnology, 2020, 8, 627.	2.0	59
336	Immunological Analysis of the Hepatitis B Virus â€œaâ€•Determinant Displayed on Chimeric Virus-Like Particles of Macrobrachium rosenbergii Nodavirus Capsid Protein Produced in Sf9 Cells. Vaccines, 2020, 8, 275.	2.1	5
337	Interaction Between Virus-Like Particles (VLPs) and Pattern Recognition Receptors (PRRs) From Dendritic Cells (DCs): Toward Better Engineering of VLPs. Frontiers in Immunology, 2020, 11, 1100.	2.2	119
338	Enhanced protective immune response of foot-and-mouth disease vaccine through DNA-loaded virus-like particles. Microbial Pathogenesis, 2020, 143, 104130.	1.3	3
339	Virus-Like Particles Derived From a Virulent Strain of Pest des Petits Ruminants Virus Elicit a More Vigorous Immune Response in Mice and Small Ruminants Than Those From a Vaccine Strain. Frontiers in Microbiology, 2020, 11, 609.	1.5	6
340	SARS-CoV-2 vaccine research and development: Conventional vaccines and biomimetic nanotechnology strategies. Asian Journal of Pharmaceutical Sciences, 2021, 16, 136-146.	4.3	24
341	Nanocarrier-based vaccine delivery systems for synthetic peptide vaccines. , 2021, , 509-535.		2
342	Role of Microbial Nanotechnology in Diagnostics. , 2021, , 237-274.		1
343	Exploration on the expression and assembly of virus-like particles. Biotechnology Notes, 2021, 2, 51-58.	0.7	4
344	Chapter Two: Literature Review. , 2021, , 22-31.		0
345	Nanomedicine in Human Health Therapeutics and Drug Delivery. Advances in Chemical and Materials Engineering Book Series, 2021, , 229-251.	0.2	9
346	Immunity against Lagovirus europaeus and the Impact of the Immunological Studies on Vaccination. Vaccines, 2021, 9, 255.	2.1	13
347	Dry Formulation of Virus-Like Particles in Electrospun Nanofibers. Vaccines, 2021, 9, 213.	2.1	5
348	VLP-Based Vaccines as a Suitable Technology to Target Trypanosomatid Diseases. Vaccines, 2021, 9, 220.	2.1	6
349	A review of combination adjuvants for malaria vaccines: a promising approach for vaccine development. International Journal for Parasitology, 2021, 51, 699-717.	1.3	8
350	Hepatitis B core-based virus-like particles: A platform for vaccine development in plants. Biotechnology Reports (Amsterdam, Netherlands), 2021, 29, e00605.	2.1	21
351	Nanocarrier vaccines for SARS-CoV-2. Advanced Drug Delivery Reviews, 2021, 171, 215-239.	6.6	66
352	Self-assembled raccoon dog parvovirus VP2 protein confers immunity against RDPV disease in raccoon dogs: in vitro and in vivo studies. Virology Journal, 2021, 18, 79.	1.4	0

#	Article	IF	Citations
353	Peptide-based supramolecular vaccine systems. Acta Biomaterialia, 2021, 133, 153-167.	4.1	39
354	Nanoscale pathogens treated with nanomaterial-like peptides: aÂplatform technology appropriate for future pandemics. Nanomedicine, 2021, 16, 1237-1254.	1.7	10
355	Solubility Controlling Peptide Tags of Opposite Charges Generate a Bivalent Immune Response Against Dengue ED3 Serotypes 3 and 4. Frontiers in Immunology, 2021, 12, 671590.	2.2	3
356	Platforms for Production of Protein-Based Vaccines: From Classical to Next-Generation Strategies. Biomolecules, 2021, 11, 1072.	1.8	53
357	Single dose of multi-clade virus-like particle vaccine protects chickens against clade 2.3.2.1 and clade 2.3.4.4 highly pathogenic avian influenza viruses. Scientific Reports, 2021, 11, 13786.	1.6	13
358	Viral Toxin NS1 Implication in Dengue Pathogenesis Making It a Pivotal Target in Development of Efficient Vaccine. Vaccines, 2021, 9, 946.	2.1	8
359	Preparation and evaluation of virus-like particle vaccine against H3N8 subtype equine influenza. Microbial Pathogenesis, 2021, 157, 104885.	1.3	1
360	Four Simple Biomimetic Mineralization Methods to Improve the Thermostability and Immunogenicity of Virus-like Particles as a Vaccine against Foot-and-Mouth Disease. Vaccines, 2021, 9, 891.	2.1	9
361	Porcine Circovirus (PCV) Genotype 2d-Based Virus-like Particles (VLPs) Induced Broad Cross-Neutralizing Antibodies against Diverse Genotypes and Provided Protection in Dual-Challenge Infection of a PCV2d Virus and a Type 1 Porcine Reproductive and Respiratory Syndrome Virus (PRRSV). Pathogens, 2021, 10, 1145.	1.2	13
362	PhotothermalPhage: A Virus-Based Photothermal Therapeutic Agent. Journal of the American Chemical Society, 2021, 143, 16428-16438.	6.6	33
363	Non-Assembled ORF2 Capsid Protein of Porcine Circovirus 2b Does Not Confer Protective Immunity. Pathogens, 2021, 10, 1161.	1.2	2
364	Chimeric VLPs Bearing VP60 from Two Serotypes of Rabbit Haemorrhagic Disease Virus Are Protective against Both Viruses. Vaccines, 2021, 9, 1005.	2.1	6
365	An Overview of Influenza Viruses and Vaccines. Vaccines, 2021, 9, 1032.	2.1	49
366	Severe acute respiratory syndrome Coronavirus 2 virus-like particle and its application in Chinese medical research. World Journal of Traditional Chinese Medicine, 2021, .	0.9	2
367	Supramolecular virus-like particles by co-assembly of triblock polypolypeptide and PAMAM dendrimers. Soft Matter, 2021, 17, 5044-5049.	1.2	4
368	Ongoing Clinical Trials of Vaccines to Fight against COVID-19 Pandemic. Immune Network, 2021, 21, e5.	1.6	21
372	Lentivirus-Based Virus-Like Particles as a New Protein Delivery Tool. Methods in Molecular Biology, 2010, 614, 111-124.	0.4	28
373	Purification and characterization of immunogenic recombinant virus-like particles of porcine circovirus type 2 expressed in silkworm pupae. Journal of General Virology, 2018, 99, 917-926.	1.3	24

#	Article	IF	Citations
374	Potent neutralization activity against type O foot-and-mouth disease virus elicited by a conserved type O neutralizing epitope displayed on bovine parvovirus virus-like particles. Journal of General Virology, 2019, 100, 187-198.	1.3	3
376	A review of COVID-19 vaccines in development: 6 months into the pandemic. Pan African Medical Journal, 2020, 37, 124.	0.3	6
377	Expression and Characterization of Yeast Derived Chikungunya Virus Like Particles (CHIK-VLPs) and Its Evaluation as a Potential Vaccine Candidate. PLoS Neglected Tropical Diseases, 2016, 10, e0004782.	1.3	53
378	Chimaeric Virus-Like Particles Derived from Consensus Genome Sequences of Human Rotavirus Strains Co-Circulating in Africa. PLoS ONE, 2014, 9, e105167.	1.1	4
379	Enterovirus-71 Virus-Like Particles Induce the Activation and Maturation of Human Monocyte-Derived Dendritic Cells through TLR4 Signaling. PLoS ONE, 2014, 9, e111496.	1.1	20
380	Immunogenicity of Virus Like Particle Forming Baculoviral DNA Vaccine against Pandemic Influenza H1N1. PLoS ONE, 2016, 11, e0154824.	1.1	14
381	IgA antibody production by intrarectal immunization of mice using recombinant major capsid protein of hamster polyomavirus. European Journal of Microbiology and Immunology, 2012, 2, 231-238.	1.5	10
382	Recent Patents on Oral Vaccine Design. Recent Patents on Endocrine, Metabolic & Immune Drug Discovery, 2009, 3, 179-193.	0.7	1
383	Virus Like Particles as Immunogens and Universal Nanocarriers. Polish Journal of Microbiology, 2015, 64, 3-13.	0.6	52
384	Transient expression of hemagglutinin antigen from canine influenza virus H3N2 inNicotiana benthamianaandLactuca sativa. Clinical and Experimental Vaccine Research, 2019, 8, 124.	1.1	5
385	Review: Development of SARS-CoV-2 immuno-enhanced COVID-19 vaccines with nano-platform. Nano Research, 2022, 15, 2196-2225.	5.8	8
386	Hepatitis E virus capsid as a carrier of exogenous antigens for the development of chimeric virus-like particles. Intervirology, 2021, , .	1.2	1
387	Aspects of Microparticle Utilization for Potentiation of Novel Vaccines: Promises and Risks. NATO Science for Peace and Security Series B: Physics and Biophysics, 2009, , 397-412.	0.2	0
388	A Case Study of Cleaner Production in Acrylonitrile Butadiene Styrene Resin Companies in China. Journal of Environmental Science and Technology, 2010, 3, 148-158.	0.3	0
389	Functional Virus-Like Particles Production Using Silkworm and Their Application in Life Science. Journal of Biotechnology & Biomaterials, 2012, s9, .	0.3	2
390	Expression of recombinant Hepatitis C virus (HCV) ore, E1 and E2 proteins by the baculovirus expression vector system. African Journal of Microbiology Research, 2012, 6, .	0.4	1
391	New approaches to VLP-based vaccines. Microbiology Australia, 2017, 38, 93.	0.1	0
395	Virus-like Particlesâ€Application in Nano Vaccines: A Review. International Journal of Drug Delivery Technology, 2020, 10, 366-368.	0.0	0

#	Article	IF	Citations
396	Influence of temperature on the antigenic changes of virus-like particles. Clinical and Experimental Vaccine Research, 2020, 9, 126.	1.1	1
397	Biomedical Applications of Viral Nanoparticles in Vaccine Therapy. , 2020, , 213-236.		1
398	Nature-inspired dynamic gene-loaded nanoassemblies for the treatment of brain diseases. Advanced Drug Delivery Reviews, 2022, 180, 114029.	6.6	9
399	Plant-derived VLP: a worthy platform to produce vaccine against SARS-CoV-2. Biotechnology Letters, 2021, , 1.	1.1	13
400	Virus-Like Particles Containing the E2 Core Domain of Hepatitis C Virus Generate Broadly Neutralizing Antibodies in Guinea Pigs. Journal of Virology, 2022, 96, JVI0167521.	1.5	8
401	Self-Assembly of Flagellin into Immunostimulatory Ring-like Nanostructures as an Antigen Delivery System. ACS Biomaterials Science and Engineering, 2022, 8, 694-707.	2.6	4
402	Review: A systematic review of virus-like particles of coronavirus: Assembly, generation, chimerism and their application in basic research and in the clinic. International Journal of Biological Macromolecules, 2022, 200, 487-497.	3.6	5
403	Therapeutic Applications of Nanotechnology in the Prevention of Infectious Diseases. Nanotechnology in the Life Sciences, 2022, , 323-343.	0.4	1
404	Construction of Orthogonal Modular Proteinaceous Nanovaccine Delivery Vectors Based on mSA-Biotin Binding. Nanomaterials, 2022, 12, 734.	1.9	8
405	Current advances and challenges in COVID-19 vaccine development: from conventional vaccines to next-generation vaccine platforms. Molecular Biology Reports, 2022, 49, 4943-4957.	1.0	29
406	Development of Plant-Based Vaccines for Prevention of Avian Influenza and Newcastle Disease in Poultry. Vaccines, 2022, 10, 478.	2.1	10
407	Precise Self-assembly of Janus Pyramid Heteroclusters into Core-Corona Nanodots and Nanodot Supracrystals: Implications for the Construction of Virus-like Particles and Nanomaterials. ACS Applied Nano Materials, 2022, 5, 5558-5568.	2.4	3
408	In vitro refolding of the structural protein VP1 of parvovirus B19 produces virus-like particles with functional VP1 unique region. Virology, 2022, 570, 57-66.	1.1	4
409	Vaccine Technologies and Platforms for Infectious Diseases: Current Progress, Challenges, and Opportunities. Vaccines, 2021, 9, 1490.	2.1	48
410	Rational design of novel fusion rabies glycoproteins displaying a major antigenic site of foot-and-mouth disease virus for vaccine applications. Applied Microbiology and Biotechnology, 2022, 106, 579-592.	1.7	1
411	Nanoscience versus Viruses: The SARSâ€CoVâ€2 Case. Advanced Functional Materials, 2022, 32, 2107826.	7.8	8
412	Production of a Hepatitis E Vaccine Candidate Using the Pichia pastoris Expression System. Methods in Molecular Biology, 2022, 2412, 117-141.	0.4	1
413	Virus Benzeri PartikÃ¼ller ve AÅŸÄ±larÄ±n GeliÅŸtirilmesinde Ã–nemi. Van Sağlık Bilimleri Dergisi, 0, , .	0.6	0

#	Article	IF	Citations
414	Bio-mineralization of virus-like particles by metalâ€“organic framework nanoparticles enhances the thermostability and immune responses of the vaccines. Journal of Materials Chemistry B, 2022, 10, 2853-2864.	2.9	18
423	Flagellin/Virus-like Particle Hybrid Platform with High Immunogenicity, Safety, and Versatility for Vaccine Development. ACS Applied Materials & Interfaces, 2022, 14, 21872-21885.	4.0	10
424	Recombinant Protein Technology in the Challenging Era of Coronaviruses. Processes, 2022, 10, 946.	1.3	3
425	An Overview of Vaccine Adjuvants: Current Evidence and Future Perspectives. Vaccines, 2022, 10, 819.	2.1	57
426	Nanoparticle- and Microparticle-Based Vaccines against Orbiviruses of Veterinary Importance. Vaccines, 2022, 10, 1124.	2.1	3
428	Self-adjuvanting cancer nanovaccines. Journal of Nanobiotechnology, 2022, 20, .	4.2	14
429	Virus-like Particles: Fundamentals and Biomedical Applications. International Journal of Molecular Sciences, 2022, 23, 8579.	1.8	34
430	Virus-like particle vaccinology, from bench to bedside. , 2022, 19, 993-1011.		61
431	Pathogenicity of Avian Polyomaviruses and Prospect of Vaccine Development. Viruses, 2022, 14, 2079.	1.5	6
432	How promising are HIV-1-based virus-like particles for medical applications. Frontiers in Cellular and Infection Microbiology, 0, 12, .	1.8	5
434	Improvement of Modular Protein Display Efficiency in SpyTag-Implemented Norovirus-like Particles. Biomacromolecules, 2023, 24, 308-318.	2.6	2
435	Piezoelectric Biosensors and Nanomaterials-based Therapeutics for Coronavirus and Other Viruses: A Mini-review. Current Topics in Medicinal Chemistry, 2023, 23, 115-127.	1.0	3
436	High yield production of norovirus GII.4 virus-like particles using silkworm pupae and evaluation of their protective immunogenicity. Vaccine, 2022, , .	1.7	0
437	Virus-like Particles as Antiviral Vaccine: Mechanism, Design, and Application. Biotechnology and Bioprocess Engineering, 2023, 28, 1-16.	1.4	5
438	An overview of the vaccine platforms to combat COVID-19 with a focus on the subunit vaccines. Progress in Biophysics and Molecular Biology, 2023, 178, 32-49.	1.4	16
439	Single-component multilayered self-assembling protein nanoparticles presenting glycan-trimmed uncleaved prefusion optimized envelope trimers as HIV-1 vaccine candidates. Nature Communications, 2023, 14, .	5.8	14
440	Protein-based nano-vaccines against SARS-CoV-2: Current design strategies and advances of candidate vaccines. International Journal of Biological Macromolecules, 2023, 236, 123979.	3.6	4
441	Vaccines against Group B Coxsackieviruses and Their Importance. Vaccines, 2023, 11, 274.	2.1	3

#	Article	IF	Citations
442	Virus-like nanoparticles as enzyme carriers for Enzyme Replacement Therapy (ERT). Virology, 2023, 580, 73-87.	1.1	6
443	Oral and Subcutaneous Immunization with a Plant-Produced Mouse-Specific Zona Pellucida 3 Peptide Presented on Hepatitis B Core Antigen Virus-like Particles. Vaccines, 2023, 11, 462.	2.1	1
444	Yeast-Based Virus-like Particles as an Emerging Platform for Vaccine Development and Delivery. Vaccines, 2023, 11, 479.	2.1	9
445	Self-assembled nanoparticles: A new platform for revolutionizing therapeutic cancer vaccines. Frontiers in Immunology, 0, 14, .	2.2	1
447	Siteâ€Specific Modification of Virusâ€Like Particles for Exogenous Tumor Antigen Display and Minimizing Preexisting Immunity. Small, 2023, 19, .	5.2	1
448	Comparative Efficacy of Mayaro Virus-Like Particle Vaccines Produced in Insect or Mammalian Cells. Journal of Virology, 2023, 97, .	1.5	2
449	B and T Cell Epitopes of the Incursionary Foot-and-Mouth Disease Virus Serotype SAT2 for Vaccine Development. Viruses, 2023, 15, 797.	1.5	3
450	Adeno-associated virus vector system controlling capsid expression improves viral quantity and quality. IScience, 2023, 26, 106487.	1.9	3
451	Carrier diversity and chemical ligations in the toolbox for designing tumor-associated carbohydrate antigens (TACAs) as synthetic vaccine candidates. Chemical Society Reviews, 2023, 52, 3353-3396.	18.7	3
462	Metal-Based Nanoparticles for the Diagnostics, Therapy, and Prevention of Viral Infections. Nanobiotechnology Reports, 2023, 18, 165-188.	0.2	0
463	Diversities of Various Nanomaterials-Based Vaccines for Healthcare Applications. , 2023, , 1-21.		0
464	Harnessing Knowledge from COVID-19 Scenario for New Generation Vaccine Development to Control Pandemics in Animals. Livestock Diseases and Management, 2023, , 249-279.	0.5	0