

# Optimization of Lipid Nanoparticle Formulations for m Factorial and Definitive Screening Designs

Nano Letters

15, 7300-7306

DOI: [10.1021/acs.nanolett.5b02497](https://doi.org/10.1021/acs.nanolett.5b02497)

Citation Report

#	ARTICLE	IF	CITATIONS
1	Recent Developments of Liposomes as Nanocarriers for Theranostic Applications. <i>Theranostics</i> , 2016, 6, 1336-1352.	4.6	219
2	Therapeutic efficacy in a hemophilia B model using a biosynthetic mRNA liver depot system. <i>Gene Therapy</i> , 2016, 23, 699-707.	2.3	125
3	mRNA vaccine delivery using lipid nanoparticles. <i>Therapeutic Delivery</i> , 2016, 7, 319-334.	1.2	414
4	Transcript-activated collagen matrix as sustained mRNA delivery system for bone regeneration. <i>Journal of Controlled Release</i> , 2016, 239, 137-148.	4.8	63
5	Efficacy and immunogenicity of unmodified and pseudouridine-modified mRNA delivered systemically with lipid nanoparticles in vivo. <i>Biomaterials</i> , 2016, 109, 78-87.	5.7	137
6	Polymer-Lipid Nanoparticles for Systemic Delivery of mRNA to the Lungs. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 13808-13812.	7.2	220
7	Polymer-Lipid Nanoparticles for Systemic Delivery of mRNA to the Lungs. <i>Angewandte Chemie</i> , 2016, 128, 14012-14016.	1.6	42
8	Systematic optimization of an engineered hydrogel allows for selective control of human neural stem cell survival and differentiation after transplantation in the stroke brain. <i>Biomaterials</i> , 2016, 105, 145-155.	5.7	184
9	Cellular Delivery of RNA Nanoparticles. <i>ACS Combinatorial Science</i> , 2016, 18, 527-547.	3.8	47
10	Biodegradable Dendronized Polymers for Efficient mRNA Delivery. <i>ChemistrySelect</i> , 2016, 1, 4413-4417.	0.7	8
11	mRNA-based therapeutics—Advances and perspectives. <i>Biochemistry (Moscow)</i> , 2016, 81, 709-722.	0.7	49
12	Effects of local structural transformation of lipid-like compounds on delivery of messenger RNA. <i>Scientific Reports</i> , 2016, 6, 22137.	1.6	37
13	Bioinspired Alkenyl Amino Alcohol Ionizable Lipid Materials for Highly Potent In Vivo mRNA Delivery. <i>Advanced Materials</i> , 2016, 28, 2939-2943.	11.1	172
14	Therapeutic genome editing by combined viral and non-viral delivery of CRISPR system components in vivo. <i>Nature Biotechnology</i> , 2016, 34, 328-333.	9.4	732
15	Effects of Chemically Modified Messenger RNA on Protein Expression. <i>Bioconjugate Chemistry</i> , 2016, 27, 849-853.	1.8	106
16	Materials for non-viral intracellular delivery of messenger RNA therapeutics. <i>Journal of Controlled Release</i> , 2016, 240, 227-234.	4.8	286
17	Nanotechnologies in delivery of mRNA therapeutics using nonviral vector-based delivery systems. <i>Gene Therapy</i> , 2017, 24, 133-143.	2.3	270
18	Definitive screening design applied to electrochemical degradation of Chromotrope 2R with BDD anodes. <i>Chemosphere</i> , 2017, 171, 362-369.	4.2	16

#	ARTICLE	IF	CITATIONS
19	Charge-altering releasable transporters (CARTs) for the delivery and release of mRNA in living animals. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E448-E456.	3.3	207
20	Nanoparticle-Programmed Surface for Drug Release and Cell Regulation via Reversible Hybridization Reaction. ACS Applied Materials & Interfaces, 2017, 9, 4467-4474.	4.0	10
21	Translational nanoparticle engineering for cancer vaccines. Oncolmmunology, 2017, 6, e1290036.	2.1	35
22	CRISPR/Cas9-Based Genome Editing for Disease Modeling and Therapy: Challenges and Opportunities for Nonviral Delivery. Chemical Reviews, 2017, 117, 9874-9906.	23.0	418
23	Messenger RNA as a Novel Therapeutic Approach. Topics in Medicinal Chemistry, 2017, , 237-253.	0.4	8
24	Dual-functional lipid-like nanoparticles for delivery of mRNA and MRI contrast agents. Nanoscale, 2017, 9, 1575-1579.	2.8	23
25	Non-viral CRISPR/Cas Gene Editing In Vitro and In Vivo Enabled by Synthetic Nanoparticle Co-delivery of Cas9 mRNA and sgRNA. Angewandte Chemie, 2017, 129, 1079-1083.	1.6	41
26	Non-viral CRISPR/Cas Gene Editing In Vitro and In Vivo Enabled by Synthetic Nanoparticle Co-delivery of Cas9 mRNA and sgRNA. Angewandte Chemie - International Edition, 2017, 56, 1059-1063.	7.2	411
27	A new developing class of gene delivery: messenger RNA-based therapeutics. Biomaterials Science, 2017, 5, 2381-2392.	2.6	69
28	Delivering the right message: Challenges and opportunities in lipid nanoparticles-mediated modified mRNA therapeutics—An innate immune system standpoint. Seminars in Immunology, 2017, 34, 68-77.	2.7	103
29	Tools for translation: non-viral materials for therapeutic mRNA delivery. Nature Reviews Materials, 2017, 2, .	23.3	504
30	Synthesis and Biological Evaluation of Ionizable Lipid Materials for the In Vivo Delivery of Messenger RNA to B Lymphocytes. Advanced Materials, 2017, 29, 1606944.	11.1	174
31	Transient and Local Expression of Chemokine and Immune Checkpoint Traps To Treat Pancreatic Cancer. ACS Nano, 2017, 11, 8690-8706.	7.3	108
32	Systemic mRNA Delivery to the Lungs by Functional Polyester-based Carriers. Biomacromolecules, 2017, 18, 4307-4315.	2.6	80
33	Biodegradable Amino-Ester Nanomaterials for Cas9 mRNA Delivery in Vitro and in Vivo. ACS Applied Materials & Interfaces, 2017, 9, 25481-25487.	4.0	74
34	Advances in the delivery of RNA therapeutics: from concept to clinical reality. Genome Medicine, 2017, 9, 60.	3.6	491
35	Lipid Nanoparticle Assisted mRNA Delivery for Potent Cancer Immunotherapy. Nano Letters, 2017, 17, 1326-1335.	4.5	506
36	Structure-guided chemical modification of guide RNA enables potent non-viral in vivo genome editing. Nature Biotechnology, 2017, 35, 1179-1187.	9.4	375

#	ARTICLE	IF	CITATIONS
37	Supramolecular Gene Transfection Agents. , 2017, , 365-389.		1
38	Lipid Nanoparticle Formulations for Enhanced Co-delivery of siRNA and mRNA. Nano Letters, 2018, 18, 3814-3822.	4.5	184
39	In Vivo Introduction of mRNA Encapsulated in Lipid Nanoparticles to Brain Neuronal Cells and Astrocytes via Intracerebroventricular Administration. Molecular Pharmaceutics, 2018, 15, 2060-2067.	2.3	56
40	Rapid, Single-Cell Analysis and Discovery of Vected mRNA Transfection In Vivo with a loxP-Flanked tdTomato Reporter Mouse. Molecular Therapy - Nucleic Acids, 2018, 10, 55-63.	2.3	59
41	Targeted mRNA Therapy for Ornithine Transcarbamylase Deficiency. Molecular Therapy, 2018, 26, 801-813.	3.7	95
42	Development of Cationic Quaternary Ammonium Sulfonamide Amino Lipids for Nucleic Acid Delivery. ACS Applied Materials & Interfaces, 2018, 10, 2302-2311.	4.0	32
43	Structure of Lipid Nanoparticles Containing siRNA or mRNA by Dynamic Nuclear Polarization-Enhanced NMR Spectroscopy. Journal of Physical Chemistry B, 2018, 122, 2073-2081.	1.2	121
44	State-of-the-Art Design and Rapid-Mixing Production Techniques of Lipid Nanoparticles for Nucleic Acid Delivery. Small Methods, 2018, 2, 1700375.	4.6	165
45	One Size Does Not Fit All: The Effect of Chain Length and Charge Density of Poly(ethylene imine) Based Copolymers on Delivery of pDNA, mRNA, and RepRNA Polyplexes. Biomacromolecules, 2018, 19, 2870-2879.	2.6	51
46	Current Status of Messenger RNA Delivery Systems. Nucleic Acid Therapeutics, 2018, 28, 158-165.	2.0	22
47	Application of a novel definitive screening design to in situ chemical oxidation of acid orange-II dye by a Co <sup>2+</sup> /PMS system. RSC Advances, 2018, 8, 3934-3940.	1.7	8
48	Advances in microfluidics for lipid nanoparticles and extracellular vesicles and applications in drug delivery systems. Advanced Drug Delivery Reviews, 2018, 128, 84-100.	6.6	215
49	Advances with using CRISPR/Cas-mediated gene editing to treat infections with hepatitis B virus and hepatitis C virus. Virus Research, 2018, 244, 311-320.	1.1	53
50	HarmonicIO: Scalable Data Stream Processing for Scientific Datasets. , 2018, , .		7
51	mRNA therapeutics deliver a hopeful message. Nano Today, 2018, 23, 16-39.	6.2	90
52	Nanomaterial Manipulation of Immune Microenvironment in the Diseased Liver. Advanced Functional Materials, 2019, 29, 1805760.	7.8	13
53	Synthetic materials at the forefront of gene delivery. Nature Reviews Chemistry, 2018, 2, 258-277.	13.8	215
54	Synchronizing the release rates of salicylate and indomethacin from degradable chitosan hydrogel and its optimization by definitive screening design. European Journal of Pharmaceutical Sciences, 2018, 125, 102-109.	1.9	13

#	ARTICLE	IF	CITATIONS
55	Nanoparticles That Deliver RNA to Bone Marrow Identified by in Vivo Directed Evolution. <i>Journal of the American Chemical Society</i> , 2018, 140, 17095-17105.	6.6	80
56	Dendrimer-Based Lipid Nanoparticles Deliver Therapeutic FAH mRNA to Normalize Liver Function and Extend Survival in a Mouse Model of Hepatorenal Tyrosinemia Type I. <i>Advanced Materials</i> , 2018, 30, e1805308.	11.1	136
57	BRISE. , 2018, , .		6
58	Restoration of tumour-growth suppression in vivo via systemic nanoparticle-mediated delivery of PTEN mRNA. <i>Nature Biomedical Engineering</i> , 2018, 2, 850-864.	11.6	214
59	Optimization of a Degradable Polymer-Lipid Nanoparticle for Potent Systemic Delivery of mRNA to the Lung Endothelium and Immune Cells. <i>Nano Letters</i> , 2018, 18, 6449-6454.	4.5	141
60	mRNA vaccination with charge-altering releasable transporters elicits human T cell responses and cures established tumors in mice. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, E9153-E9161.	3.3	92
61	Development of an Alcohol Dilution-Lyophilization Method for Preparing Lipid Nanoparticles Containing Encapsulated siRNA. <i>Biological and Pharmaceutical Bulletin</i> , 2018, 41, 1291-1294.	0.6	21
62	A "top-down" approach to actuate poly(amine-co-ester) terpolymers for potent and safe mRNA delivery. <i>Biomaterials</i> , 2018, 176, 122-130.	5.7	49
63	Co-delivery of mRNA and SPIONs through amino-ester nanomaterials. <i>Nano Research</i> , 2018, 11, 5596-5603.	5.8	10
64	Poly( $\epsilon$ -amino ester)-poly( $\epsilon$ -caprolactone) Terpolymers as Nonviral Vectors for mRNA Delivery In Vitro and In Vivo. <i>Advanced Healthcare Materials</i> , 2018, 7, e1800249.	3.9	58
65	Ionizable Amino-Polyesters Synthesized via Ring Opening Polymerization of Tertiary Amino-Alcohols for Tissue Selective mRNA Delivery. <i>Advanced Materials</i> , 2018, 30, e1801151.	11.1	95
66	A Nanostructured Lipid Carrier for Delivery of a Replicating Viral RNA Provides Single, Low-Dose Protection against Zika. <i>Molecular Therapy</i> , 2018, 26, 2507-2522.	3.7	109
67	Design of synthetic materials for intracellular delivery of RNAs: From siRNA-mediated gene silencing to CRISPR/Cas gene editing. <i>Nano Research</i> , 2018, 11, 5310-5337.	5.8	31
68	Biomedical applications of mRNA nanomedicine. <i>Nano Research</i> , 2018, 11, 5281-5309.	5.8	86
69	Transfection by cationic gemini lipids and surfactants. <i>MedChemComm</i> , 2018, 9, 1404-1425.	3.5	28
70	Recent Advances in RNA Therapeutics and RNA Delivery Systems Based on Nanoparticles. <i>Advanced Therapeutics</i> , 2018, 1, 1800065.	1.6	52
71	MicroRNAs Enable mRNA Therapeutics to Selectively Program Cancer Cells to Self-Destruct. <i>Nucleic Acid Therapeutics</i> , 2018, 28, 285-296.	2.0	93
72	Customizable Lipid Nanoparticle Materials for the Delivery of siRNAs and mRNAs. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 13582-13586.	7.2	64

#	ARTICLE	IF	CITATIONS
73	Customizable Lipid Nanoparticle Materials for the Delivery of siRNAs and mRNAs. <i>Angewandte Chemie</i> , 2018, 130, 13770-13774.	1.6	14
74	Advances in Biomaterials for Drug Delivery. <i>Advanced Materials</i> , 2018, 30, e1705328.	11.1	565
75	Plasmid-DNA lipid nanovaccines. , 2018, , 231-267.		5
76	Codelivery of mRNA with $\beta$ -Galactosylceramide Using a New Lipopolyplex Formulation Induces a Strong Antitumor Response upon Intravenous Administration. <i>ACS Omega</i> , 2019, 4, 13015-13026.	1.6	38
77	A Multifunctional Lipid-Based Nanodevice for the Highly Specific Codelivery of Sorafenib and Midkine siRNA to Hepatic Cancer Cells. <i>Molecular Pharmaceutics</i> , 2019, 16, 4031-4044.	2.3	45
78	Recent advances in the targeting of systemically administered non-viral gene delivery systems. <i>Expert Opinion on Drug Delivery</i> , 2019, 16, 1037-1050.	2.4	15
79	mRNA rescues neonatal acidemia while mice report no aftereffects. <i>EBioMedicine</i> , 2019, 46, 23-24.	2.7	0
80	Inside out: optimization of lipid nanoparticle formulations for exterior complexation and in vivo delivery of saRNA. <i>Gene Therapy</i> , 2019, 26, 363-372.	2.3	137
81	Long-term efficacy and safety of mRNA therapy in two murine models of methylmalonic acidemia. <i>EBioMedicine</i> , 2019, 45, 519-528.	2.7	48
82	Three decades of messenger RNA vaccine development. <i>Nano Today</i> , 2019, 28, 100766.	6.2	177
83	Ionizable lipid nanoparticles encapsulating barcoded mRNA for accelerated in vivo delivery screening. <i>Journal of Controlled Release</i> , 2019, 316, 404-417.	4.8	111
84	Lipid-based nanoparticle formulations for small molecules and RNA drugs. <i>Expert Opinion on Drug Delivery</i> , 2019, 16, 1205-1226.	2.4	120
85	Expression Kinetics and Innate Immune Response after Electroporation and LNP-Mediated Delivery of a Self-Amplifying mRNA in the Skin. <i>Molecular Therapy - Nucleic Acids</i> , 2019, 17, 867-878.	2.3	44
86	Delivery of mRNA to platelets using lipid nanoparticles. <i>Scientific Reports</i> , 2019, 9, 552.	1.6	26
87	Chemotherapy drugs derived nanoparticles encapsulating mRNA encoding tumor suppressor proteins to treat triple-negative breast cancer. <i>Nano Research</i> , 2019, 12, 855-861.	5.8	39
88	&lt;p&gt;Solid lipid nanoparticle&Ainduced apoptosis of macrophages via a mitochondrial-dependent pathway in vitro and in vivo&lt;/p&gt;. <i>International Journal of Nanomedicine</i> , 2019, Volume 14, 3283-3295.	3.3	14
89	iHIVARNA phase IIa, a randomized, placebo-controlled, double-blinded trial to evaluate the safety and immunogenicity of iHIVARNA-01 in chronically HIV-infected patients under stable combined antiretroviral therapy. <i>Trials</i> , 2019, 20, 361.	0.7	31
90	RNA delivery biomaterials for the treatment of genetic and rare diseases. <i>Biomaterials</i> , 2019, 217, 119291.	5.7	50

#	ARTICLE	IF	CITATIONS
91	mRNA Delivery for Therapeutic Anti-HER2 Antibody Expression In Vivo. <i>Molecular Therapy</i> , 2019, 27, 1415-1423.	3.7	125
92	Lipid Nanoparticles for Delivery of Therapeutic RNA Oligonucleotides. <i>Molecular Pharmaceutics</i> , 2019, 16, 2265-2277.	2.3	69
93	Effects of cationic adjuvant formulation particle type, fluidity and immunomodulators on delivery and immunogenicity of saRNA. <i>Journal of Controlled Release</i> , 2019, 304, 65-74.	4.8	30
94	Therapeutic mRNA delivery to leukocytes. <i>Journal of Controlled Release</i> , 2019, 305, 165-175.	4.8	43
95	Nanoparticles for nucleic acid delivery: Applications in cancer immunotherapy. <i>Cancer Letters</i> , 2019, 458, 102-112.	3.2	82
96	Cell Subtypes Within the Liver Microenvironment Differentially Interact with Lipid Nanoparticles. <i>Cellular and Molecular Bioengineering</i> , 2019, 12, 389-397.	1.0	25
97	The Skin You Are In: Design-of-Experiments Optimization of Lipid Nanoparticle Self-Amplifying RNA Formulations in Human Skin Explants. <i>ACS Nano</i> , 2019, 13, 5920-5930.	7.3	44
98	Lipid-Based DNA Therapeutics: Hallmarks of Non-Viral Gene Delivery. <i>ACS Nano</i> , 2019, 13, 3754-3782.	7.3	220
99	Genome Editing with mRNA Encoding ZFN, TALEN, and Cas9. <i>Molecular Therapy</i> , 2019, 27, 735-746.	3.7	148
100	Improved Efficacy in a Fabry Disease Model Using a Systemic mRNA Liver Depot System as Compared to Enzyme Replacement Therapy. <i>Molecular Therapy</i> , 2019, 27, 878-889.	3.7	72
101	RNA Circularization Diminishes Immunogenicity and Can Extend Translation Duration In Vivo. <i>Molecular Cell</i> , 2019, 74, 508-520.e4.	4.5	221
102	mRNA: A Novel Avenue to Antibody Therapy?. <i>Molecular Therapy</i> , 2019, 27, 773-784.	3.7	55
103	Delivering the Messenger: Advances in Technologies for Therapeutic mRNA Delivery. <i>Molecular Therapy</i> , 2019, 27, 710-728.	3.7	685
104	Application of QbD Elements for the Development of Conventional to Lipid Vesicular for Topical Drug Delivery System. , 2019, , 367-378.		0
105	Synthetic Vehicles for Encapsulation and Delivery of CRISPR/Cas9 Gene Editing Machinery. <i>Advanced Therapeutics</i> , 2019, 2, 1800085.	1.6	22
106	Comparative Molecular Immunological Activity of Physiological Metal Oxide Nanoparticle and its Anticancer Peptide and RNA Complexes. <i>Nanomaterials</i> , 2019, 9, 1670.	1.9	12
107	Therapeutic Prospects of mRNA-Based Gene Therapy for Glioblastoma. <i>Frontiers in Oncology</i> , 2019, 9, 1208.	1.3	43
108	DNA complexes as an efficient gene anticancer drug delivery therapy. , 2019, , 485-549.		0

#	ARTICLE	IF	CITATIONS
109	Delivery of mRNA vaccines with heterocyclic lipids increases anti-tumor efficacy by STING-mediated immune cell activation. <i>Nature Biotechnology</i> , 2019, 37, 1174-1185.	9.4	398
110	Delivery technologies for cancer immunotherapy. <i>Nature Reviews Drug Discovery</i> , 2019, 18, 175-196.	21.5	1,562
111	Branched Tail Lipid Nanoparticles Potently Deliver mRNA In Vivo due to Enhanced Ionization at Endosomal pH. <i>Small</i> , 2019, 15, e1805097.	5.2	159
112	Intracellular Delivery of His Tagged Genome Editing Proteins Enabled by Nitrotriacetic Acid Containing Lipidoid Nanoparticles. <i>Advanced Healthcare Materials</i> , 2019, 8, e1800996.	3.9	27
113	Nanoscale platforms for messenger RNA delivery. <i>Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology</i> , 2019, 11, e1530.	3.3	121
114	Biomaterials for Personalized Cell Therapy. <i>Advanced Materials</i> , 2020, 32, e1902005.	11.1	76
115	Tailoring mRNA Vaccine to Balance Innate/Adaptive Immune Response. <i>Trends in Molecular Medicine</i> , 2020, 26, 311-323.	3.5	203
116	The use of design of experiments with multiple responses to determine optimal formulations for in vivo hepatic mRNA delivery. <i>Journal of Controlled Release</i> , 2020, 327, 467-476.	4.8	35
117	Intracellular Antibody Delivery Mediated by Lipids, Polymers, and Inorganic Nanomaterials for Therapeutic Applications. <i>Advanced Therapeutics</i> , 2020, 3, 2000178.	1.6	21
118	Key considerations in designing CRISPR/Cas9-carrying nanoparticles for therapeutic genome editing. <i>Nanoscale</i> , 2020, 12, 21001-21014.	2.8	20
119	Review on magnetic nanoparticle-mediated hyperthermia for cancer therapy. <i>Journal of Nanoparticle Research</i> , 2020, 22, 1.	0.8	84
120	Surface-Functionalized PEGylated Nanoparticles Deliver Messenger RNA to Pulmonary Immune Cells. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 35835-35844.	4.0	45
121	Nanomaterials for Therapeutic RNA Delivery. <i>Matter</i> , 2020, 3, 1948-1975.	5.0	67
122	Manufacturing Considerations for the Development of Lipid Nanoparticles Using Microfluidics. <i>Pharmaceutics</i> , 2020, 12, 1095.	2.0	130
123	Delivery of hepatocyte growth factor mRNA from nanofibrillar scaffolds in a pig model of peripheral arterial disease. <i>Regenerative Medicine</i> , 2020, 15, 1761-1773.	0.8	5
124	The Long Road Toward COVID-19 Herd Immunity: Vaccine Platform Technologies and Mass Immunization Strategies. <i>Frontiers in Immunology</i> , 2020, 11, 1817.	2.2	189
125	Investigation of pH-Responsiveness inside Lipid Nanoparticles for Parenteral mRNA Application Using Small-Angle X-ray Scattering. <i>Langmuir</i> , 2020, 36, 13331-13341.	1.6	28
126	Interface Engineering in Multiphase Systems toward Synthetic Cells and Organelles: From Soft Matter Fundamentals to Biomedical Applications. <i>Advanced Materials</i> , 2020, 32, e2002932.	11.1	40



#	ARTICLE	IF	CITATIONS
127	Efficient Colorectal Cancer Gene Therapy with IL-15 mRNA Nanoformulation. <i>Molecular Pharmaceutics</i> , 2020, 17, 3378-3391.	2.3	39
128	Nanomedicine-Based Approaches for mRNA Delivery. <i>Molecular Pharmaceutics</i> , 2020, 17, 3654-3684.	2.3	88
129	Functionalized lipid-like nanoparticles for in vivo mRNA delivery and base editing. <i>Science Advances</i> , 2020, 6, .	4.7	88
130	Vitamin C and Cardiovascular Disease: An Update. <i>Antioxidants</i> , 2020, 9, 1227.	2.2	73
131	Aerosolizable Lipid Nanoparticles for Pulmonary Delivery of mRNA through Design of Experiments. <i>Pharmaceutics</i> , 2020, 12, 1042.	2.0	75
132	Nanoparticles containing constrained phospholipids deliver mRNA to liver immune cells in vivo without targeting ligands. <i>Bioengineering and Translational Medicine</i> , 2020, 5, e10161.	3.9	36
133	Synergistic lipid compositions for albumin receptor mediated delivery of mRNA to the liver. <i>Nature Communications</i> , 2020, 11, 2424.	5.8	167
134	Combinatorial Library of Cyclic Benzylidene Acetal-Containing pH-Responsive Lipidoid Nanoparticles for Intracellular mRNA Delivery. <i>Bioconjugate Chemistry</i> , 2020, 31, 1835-1843.	1.8	15
135	Self-Degradable Lipid-Like Materials Based on Hydrolysis accelerated by the Intra-Particle Enrichment of Reactant (HYPER) for Messenger RNA Delivery. <i>Advanced Functional Materials</i> , 2020, 30, 1910575.	7.8	65
136	A Potent Branched-Tail Lipid Nanoparticle Enables Multiplexed mRNA Delivery and Gene Editing <i>In Vivo</i> . <i>Nano Letters</i> , 2020, 20, 5167-5175.	4.5	72
137	Lipid nanoparticles for nucleic acid delivery: Current perspectives. <i>Advanced Drug Delivery Reviews</i> , 2020, 154-155, 37-63.	6.6	291
138	Recent advancements in liposome technology. <i>Advanced Drug Delivery Reviews</i> , 2020, 156, 4-22.	6.6	301
139	Delivery of self-amplifying mRNA vaccines by cationic lipid nanoparticles: The impact of cationic lipid selection. <i>Journal of Controlled Release</i> , 2020, 325, 370-379.	4.8	95
140	Complexation of single stranded RNA with an ionizable lipid: an all-atom molecular dynamics simulation study. <i>Soft Matter</i> , 2020, 16, 6993-7005.	1.2	23
141	Naturally Derived Membrane Lipids Impact Nanoparticle-Based Messenger RNA Delivery. <i>Cellular and Molecular Bioengineering</i> , 2020, 13, 463-474.	1.0	34
142	Role of Lipid-Based and Polymer-Based Non-Viral Vectors in Nucleic Acid Delivery for Next-Generation Gene Therapy. <i>Molecules</i> , 2020, 25, 2866.	1.7	118
143	Lipid nanoparticle technology for therapeutic gene regulation in the liver. <i>Advanced Drug Delivery Reviews</i> , 2020, 159, 344-363.	6.6	187
144	Theranostic dendrimer-based lipid nanoparticles containing PEGylated BODIPY dyes for tumor imaging and systemic mRNA delivery in vivo. <i>Journal of Controlled Release</i> , 2020, 325, 198-205.	4.8	59

#	ARTICLE	IF	CITATIONS
145	Nanomedicines to Deliver mRNA: State of the Art and Future Perspectives. <i>Nanomaterials</i> , 2020, 10, 364.	1.9	138
146	Naturally-occurring cholesterol analogues in lipid nanoparticles induce polymorphic shape and enhance intracellular delivery of mRNA. <i>Nature Communications</i> , 2020, 11, 983.	5.8	221
147	The challenge and prospect of mRNA therapeutics landscape. <i>Biotechnology Advances</i> , 2020, 40, 107534.	6.0	221
148	Nanoparticle formulated vaccines: opportunities and challenges. <i>Nanoscale</i> , 2020, 12, 5746-5763.	2.8	69
149	Lipid-Modified Aminoglycosides for mRNA Delivery to the Liver. <i>Advanced Healthcare Materials</i> , 2020, 9, e1901487.	3.9	25
150	Ionizable Lipid Nanoparticle-Mediated mRNA Delivery for Human CAR T Cell Engineering. <i>Nano Letters</i> , 2020, 20, 1578-1589.	4.5	299
151	Organic Nanocarriers for Delivery and Targeting of Therapeutic Agents for Cancer Treatment. <i>Advanced Therapeutics</i> , 2020, 3, 1900136.	1.6	23
152	The promise of mRNA vaccines: a biotech and industrial perspective. <i>Npj Vaccines</i> , 2020, 5, 11.	2.9	303
153	Opportunities and Challenges in the Delivery of mRNA-Based Vaccines. <i>Pharmaceutics</i> , 2020, 12, 102.	2.0	320
154	Hydrophobic Domain Structure of Linear-Dendritic Poly(ethylene glycol) Lipids Affects RNA Delivery of Lipid Nanoparticles. <i>Molecular Pharmaceutics</i> , 2020, 17, 1575-1585.	2.3	17
155	Selective organ targeting (SORT) nanoparticles for tissue-specific mRNA delivery and CRISPR-Cas gene editing. <i>Nature Nanotechnology</i> , 2020, 15, 313-320.	15.6	932
156	In vitro transcribed mRNA for expression of designer nucleases: Advantages as a novel therapeutic for the management of chronic HBV infection. <i>Advanced Drug Delivery Reviews</i> , 2021, 168, 134-146.	6.6	11
157	Delivery technologies for in utero gene therapy. <i>Advanced Drug Delivery Reviews</i> , 2021, 169, 51-62.	6.6	24
158	A Systematic Study of Unsaturation in Lipid Nanoparticles Leads to Improved mRNA Transfection In Vivo. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 5848-5853.	7.2	60
159	Effect of complexing lipids on cellular uptake and expression of messenger RNA in human skin explants. <i>Journal of Controlled Release</i> , 2021, 330, 1250-1261.	4.8	28
160	A Systematic Study of Unsaturation in Lipid Nanoparticles Leads to Improved mRNA Transfection In Vivo. <i>Angewandte Chemie</i> , 2021, 133, 5912-5917.	1.6	11
161	Non-viral COVID-19 vaccine delivery systems. <i>Advanced Drug Delivery Reviews</i> , 2021, 169, 137-151.	6.6	152
162	mRNA Delivery Using Bioreducible Lipidoid Nanoparticles Facilitates Neural Differentiation of Human Mesenchymal Stem Cells. <i>Advanced Healthcare Materials</i> , 2021, 10, e2000938.	3.9	23

#	ARTICLE	IF	CITATIONS
163	A Nanoparticle Platform for Accelerated In Vivo Oral Delivery Screening of Nucleic Acids. <i>Advanced Therapeutics</i> , 2021, 4, .	1.6	13
164	Helper lipid structure influences protein adsorption and delivery of lipid nanoparticles to spleen and liver. <i>Biomaterials Science</i> , 2021, 9, 1449-1463.	2.6	84
165	Strategies for Vaccination: Conventional Vaccine Approaches Versus New-Generation Strategies in Combination with Adjuvants. <i>Pharmaceutics</i> , 2021, 13, 140.	2.0	28
166	Identification of a potent ionizable lipid for efficient macrophage transfection and systemic anti-interleukin-1 $\beta$ siRNA delivery against acute liver failure. <i>Journal of Materials Chemistry B</i> , 2021, 9, 5136-5149.	2.9	10
167	Computational and Experimental Approaches to Investigate Lipid Nanoparticles as Drug and Gene Delivery Systems. <i>Current Topics in Medicinal Chemistry</i> , 2021, 21, 92-114.	1.0	16
168	Ionizable lipid nanoparticles for in utero mRNA delivery. <i>Science Advances</i> , 2021, 7, .	4.7	110
169	Catalogue of self-targeting nano-medical inventions to accelerate clinical trials. <i>Biomaterials Science</i> , 2021, 9, 3898-3910.	2.6	4
171	Advancements in mRNA Encoded Antibodies for Passive Immunotherapy. <i>Vaccines</i> , 2021, 9, 108.	2.1	34
172	Novel lipid combination for delivery of plasmid DNA to immune cells in the spleen. <i>Journal of Controlled Release</i> , 2021, 330, 753-764.	4.8	42
173	Harnessing Endogenous Stimuli for Responsive Materials in Theranostics. <i>ACS Nano</i> , 2021, 15, 2068-2098.	7.3	117
174	A high-throughput Galectin-9 imaging assay for quantifying nanoparticle uptake, endosomal escape and functional RNA delivery. <i>Communications Biology</i> , 2021, 4, 211.	2.0	45
175	mRNA vaccine for cancer immunotherapy. <i>Molecular Cancer</i> , 2021, 20, 41.	7.9	445
176	Engineered ionizable lipid nanoparticles for targeted delivery of RNA therapeutics into different types of cells in the liver. <i>Science Advances</i> , 2021, 7, .	4.7	141
177	mRNA vaccine: a potential therapeutic strategy. <i>Molecular Cancer</i> , 2021, 20, 33.	7.9	188
178	Nano-Oncologicals: A Tortoise Trail Reaching New Avenues. <i>Advanced Functional Materials</i> , 2021, 31, 2009860.	7.8	13
179	Lipid nanoparticle-mediated codelivery of Cas9 mRNA and single-guide RNA achieves liver-specific in vivo genome editing of <i>Angptl3</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	192
180	Self-assembled mRNA vaccines. <i>Advanced Drug Delivery Reviews</i> , 2021, 170, 83-112.	6.6	248
181	mRNA in cancer immunotherapy: beyond a source of antigen. <i>Molecular Cancer</i> , 2021, 20, 48.	7.9	46

#	ARTICLE	IF	CITATIONS
182	LipoParticles: Lipid-Coated PLA Nanoparticles Enhanced In Vitro mRNA Transfection Compared to Liposomes. <i>Pharmaceutics</i> , 2021, 13, 377.	2.0	27
183	Delivery of Oligonucleotides Using a Self-Degradable Lipid-Like Material. <i>Pharmaceutics</i> , 2021, 13, 544.	2.0	20
185	Non-Immunotherapy Application of LNP-mRNA: Maximizing Efficacy and Safety. <i>Biomedicines</i> , 2021, 9, 530.	1.4	54
186	All-in-One Dendrimer-Based Lipid Nanoparticles Enable Precise HDR-Mediated Gene Editing In Vivo. <i>Advanced Materials</i> , 2021, 33, e2006619.	11.1	52
187	Lipid Nanoparticle-Mediated Delivery of mRNA Therapeutics and Vaccines. <i>Trends in Molecular Medicine</i> , 2021, 27, 616-617.	3.5	52
188	The Importance of Apparent pKa in the Development of Nanoparticles Encapsulating siRNA and mRNA. <i>Trends in Pharmacological Sciences</i> , 2021, 42, 448-460.	4.0	76
189	Scalable mRNA and siRNA Lipid Nanoparticle Production Using a Parallelized Microfluidic Device. <i>Nano Letters</i> , 2021, 21, 5671-5680.	4.5	120
190	CRISPR-Associated (CAS) Effectors Delivery via Microfluidic Cell-Deformation Chip. <i>Materials</i> , 2021, 14, 3164.	1.3	10
191	Functionalized lipid nanoparticles for subcutaneous administration of mRNA to achieve systemic exposures of a therapeutic protein. <i>Molecular Therapy - Nucleic Acids</i> , 2021, 24, 369-384.	2.3	47
192	Role of nanotechnology behind the success of mRNA vaccines for COVID-19. <i>Nano Today</i> , 2021, 38, 101142.	6.2	170
193	mRNA-Loaded Lipid-Like Nanoparticles for Liver Base Editing Via the Optimization of Central Composite Design. <i>Advanced Functional Materials</i> , 2021, 31, 2011068.	7.8	19
194	Microfluidic formulation of nanoparticles for biomedical applications. <i>Biomaterials</i> , 2021, 274, 120826.	5.7	143
195	Impact of lipid nanoparticle size on mRNA vaccine immunogenicity. <i>Journal of Controlled Release</i> , 2021, 335, 237-246.	4.8	146
197	Lipids and Lipid Derivatives for RNA Delivery. <i>Chemical Reviews</i> , 2021, 121, 12181-12277.	23.0	227
198	Systemic delivery of mRNA and DNA to the lung using polymer-lipid nanoparticles. <i>Biomaterials</i> , 2021, 275, 120966.	5.7	54
199	Microfluidic Formulation of DNA-Loaded Multicomponent Lipid Nanoparticles for Gene Delivery. <i>Pharmaceutics</i> , 2021, 13, 1292.	2.0	25
200	Lipid nanoparticles for mRNA delivery. <i>Nature Reviews Materials</i> , 2021, 6, 1078-1094.	23.3	1,256
201	Expediting in vitro characterization of mRNA-based gene therapies via high-content fluorescent imaging. <i>Analytical Biochemistry</i> , 2021, 627, 114259.	1.1	2

#	ARTICLE	IF	CITATIONS
202	Biopharmaceutics 4.0, Advanced Pre-Clinical Development of mRNA-Encoded Monoclonal Antibodies to Immunosuppressed Murine Models. <i>Vaccines</i> , 2021, 9, 890.	2.1	4
203	mRNA vaccines for infectious diseases: principles, delivery and clinical translation. <i>Nature Reviews Drug Discovery</i> , 2021, 20, 817-838.	21.5	577
204	From influenza to COVID-19: Lipid nanoparticle mRNA vaccines at the frontiers of infectious diseases. <i>Acta Biomaterialia</i> , 2021, 131, 16-40.	4.1	140
205	Nucleic acid delivery and nanoparticle design for COVID vaccines. <i>MRS Bulletin</i> , 2021, 46, 832-839.	1.7	12
206	Additive manufacturing in drug delivery: Innovative drug product design and opportunities for industrial application. <i>Advanced Drug Delivery Reviews</i> , 2021, 178, 113990.	6.6	28
207	Pathophysiological communication between hepatocytes and non-parenchymal cells in liver injury from NAFLD to liver fibrosis. <i>Advanced Drug Delivery Reviews</i> , 2021, 176, 113869.	6.6	111
208	Design of experiment optimization of aligned polymer thermoelectrics doped by ion-exchange. <i>Applied Physics Letters</i> , 2021, 119, .	1.5	10
209	Delivery of Oligonucleotide Therapeutics: Chemical Modifications, Lipid Nanoparticles, and Extracellular Vesicles. <i>ACS Nano</i> , 2021, 15, 13993-14021.	7.3	74
210	mRNA delivery via non-viral carriers for biomedical applications. <i>International Journal of Pharmaceutics</i> , 2021, 607, 121020.	2.6	17
211	Nucleic acid delivery for therapeutic applications. <i>Advanced Drug Delivery Reviews</i> , 2021, 178, 113834.	6.6	122
212	Biomembrane-based nanostructures for cancer targeting and therapy: From synthetic liposomes to natural biomembranes and membrane-vesicles. <i>Advanced Drug Delivery Reviews</i> , 2021, 178, 113974.	6.6	65
213	Dynamic mRNA polyplexes benefit from bio-reducible cleavage sites for in vitro and in vivo transfer. <i>Journal of Controlled Release</i> , 2021, 339, 27-40.	4.8	20
214	Boosting ionizable lipid nanoparticle-mediated <i>in vivo</i> mRNA delivery through optimization of lipid amine-head groups. <i>Biomaterials Science</i> , 2021, 9, 7534-7546.	2.6	19
215	Nanomaterial Delivery Systems for mRNA Vaccines. <i>Vaccines</i> , 2021, 9, 65.	2.1	310
216	Preparation and Optimization of Lipid-Like Nanoparticles for mRNA Delivery. <i>Methods in Molecular Biology</i> , 2017, 1632, 207-217.	0.4	9
217	pH-responsive Drug Delivery Systems. <i>Biomaterials Science Series</i> , 2018, , 51-82.	0.1	2
218	Blood cell-derived extracellular vesicles: diagnostic biomarkers and smart delivery systems. <i>Bioengineered</i> , 2021, 12, 7929-7940.	1.4	20
219	Optimization of lipid nanoparticles for the delivery of nebulized therapeutic mRNA to the lungs. <i>Nature Biomedical Engineering</i> , 2021, 5, 1059-1068.	11.6	165

#	ARTICLE	IF	CITATIONS
220	Nanoparticle-Mediated <i>In Situ</i> Molecular Reprogramming of Immune Checkpoint Interactions for Cancer Immunotherapy. ACS Nano, 2021, 15, 17549-17564.	7.3	16
221	Selective Encapsulation of Therapeutic mRNA in Engineered Extracellular Vesicles by DNA Aptamer. Nano Letters, 2021, 21, 8563-8570.	4.5	24
222	Orthogonal Design of Experiments for Optimization of Lipid Nanoparticles for mRNA Engineering of CAR T Cells. Nano Letters, 2022, 22, 533-542.	4.5	57
223	Lipid Nanoparticles for Organ-Specific mRNA Therapeutic Delivery. Pharmaceutics, 2021, 13, 1675.	2.0	33
226	Amniotic fluid stabilized lipid nanoparticles for in utero intra-amniotic mRNA delivery. Journal of Controlled Release, 2022, 341, 616-633.	4.8	29
227	Lipid nanoparticle chemistry determines how nucleoside base modifications alter mRNA delivery. Journal of Controlled Release, 2022, 341, 206-214.	4.8	27
228	Power in Numbers: Harnessing Combinatorial and Integrated Screens to Advance Nanomedicine. JACS Au, 2022, 2, 12-21.	3.6	10
229	Neurosurgery at the crossroads of immunology and nanotechnology. New reality in the COVID-19 pandemic. Advanced Drug Delivery Reviews, 2022, 181, 114033.	6.6	5
230	A scalable and robust cationic lipid/polymer hybrid nanoparticle platform for mRNA delivery. International Journal of Pharmaceutics, 2022, 611, 121314.	2.6	14
231	Nanotechnology: A Potential Weapon to Fight against COVID-19. Particle and Particle Systems Characterization, 2022, 39, 2100159.	1.2	9
232	pH-Dependent Phase Behavior and Stability of Cationic Lipid-mRNA Nanoparticles. Journal of Pharmaceutical Sciences, 2022, 111, 690-698.	1.6	12
233	Prediction of lipid nanoparticles for mRNA vaccines by the machine learning algorithm. Acta Pharmaceutica Sinica B, 2022, 12, 2950-2962.	5.7	33
234	Development of Lipid Nanoparticles for the Delivery of Macromolecules Based on the Molecular Design of pH-Sensitive Cationic Lipids. Chemical and Pharmaceutical Bulletin, 2021, 69, 1141-1159.	0.6	14
235	Non-liver mRNA Delivery. Accounts of Chemical Research, 2022, 55, 13-23.	7.6	61
236	Chemistry of Lipid Nanoparticles for RNA Delivery. Accounts of Chemical Research, 2022, 55, 2-12.	7.6	230
237	Approved and marketed nanoparticles for disease targeting and applications in COVID-19. Nanotechnology Reviews, 2021, 10, 1941-1977.	2.6	43
238	Drug delivery systems for RNA therapeutics. Nature Reviews Genetics, 2022, 23, 265-280.	7.7	417
239	Non-Viral Delivery of RNA Gene Therapy to the Central Nervous System. Pharmaceutics, 2022, 14, 165.	2.0	6

#	ARTICLE	IF	CITATIONS
240	Intravenous Delivery of RNA Encoding Anti-PD-1 Human Monoclonal Antibody for Treating Intestinal Cancer. <i>Journal of Cancer</i> , 2022, 13, 579-588.	1.2	18
241	Optimization of phospholipid chemistry for improved lipid nanoparticle (LNP) delivery of messenger RNA (mRNA). <i>Biomaterials Science</i> , 2022, 10, 549-559.	2.6	56
242	Recent advances in lipid nanoparticles for delivery of nucleic acid, mRNA, and gene editing-based therapeutics. <i>Drug Metabolism and Pharmacokinetics</i> , 2022, 44, 100450.	1.1	33
243	Nanoparticle-based delivery strategies of multifaceted immunomodulatory RNA for cancer immunotherapy. <i>Journal of Controlled Release</i> , 2022, 343, 564-583.	4.8	21
244	Development of multivalent mRNA vaccine candidates for seasonal or pandemic influenza. <i>Npj Vaccines</i> , 2021, 6, 153.	2.9	46
245	NAD Depletion Mediates Cytotoxicity in Human Neurons With Autophagy Deficiency. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0
246	The Potential of Nanomedicine to Unlock the Limitless Applications of mRNA. <i>Pharmaceutics</i> , 2022, 14, 460.	2.0	11
247	TRAIL Therapy for Breast Cancer Treatment by Employing Lipopolymer mRNA Delivery. , 2022, 1, 101-112.		3
248	Lipid Nanoparticle Delivery Systems to Enable mRNA-Based Therapeutics. <i>Pharmaceutics</i> , 2022, 14, 398.	2.0	31
249	Nonviral Delivery Systems of mRNA Vaccines for Cancer Gene Therapy. <i>Pharmaceutics</i> , 2022, 14, 512.	2.0	19
250	Coupling Lipid Nanoparticle Structure and Automated Single-Particle Composition Analysis to Design Phospholipase-Responsive Nanocarriers. <i>Advanced Materials</i> , 2022, 34, e2200839.	11.1	10
251	Cancer vaccines as promising immuno-therapeutics: platforms and current progress. <i>Journal of Hematology and Oncology</i> , 2022, 15, 28.	6.9	216
253	Nanoscale delivery platforms for RNA therapeutics: Challenges and the current state of the art. <i>Med</i> , 2022, 3, 167-187.	2.2	7
254	Importance of Process Parameters Influencing the Mean Diameters of siRNA-Containing Lipid Nanoparticles (LNPs) on the <i>In Vitro</i> Activity of Prepared LNPs. <i>Biological and Pharmaceutical Bulletin</i> , 2022, 45, 497-507.	0.6	1
255	Microfluidic technologies and devices for lipid nanoparticle-based RNA delivery. <i>Journal of Controlled Release</i> , 2022, 344, 80-96.	4.8	92
256	Delivery of mRNA for regulating functions of immune cells. <i>Journal of Controlled Release</i> , 2022, 345, 494-511.	4.8	28
257	The replacement of helper lipids with charged alternatives in lipid nanoparticles facilitates targeted mRNA delivery to the spleen and lungs. <i>Journal of Controlled Release</i> , 2022, 345, 819-831.	4.8	83
258	mRNA vaccines for COVID-19 and diverse diseases. <i>Journal of Controlled Release</i> , 2022, 345, 314-333.	4.8	50

#	ARTICLE	IF	CITATIONS
259	Functional nanoparticles in electrospun fibers for biomedical applications. <i>Nano Select</i> , 2022, 3, 999-1011.	1.9	9
260	An ionizable lipid toolbox for RNA delivery. <i>Nature Communications</i> , 2021, 12, 7233.	5.8	182
261	Mechanistic Studies of an Automated Lipid Nanoparticle Reveal Critical Pharmaceutical Properties Associated with Enhanced mRNA Functional Delivery In Vitro and In Vivo. <i>Small</i> , 2022, 18, e2105832.	5.2	31
262	Improvement of mRNA Delivery Efficiency to a T Cell Line by Modulating PEG-Lipid Content and Phospholipid Components of Lipid Nanoparticles. <i>Pharmaceutics</i> , 2021, 13, 2097.	2.0	11
263	Smart Lipid-Based Nanosystems for Therapeutic Immune Induction against Cancers: Perspectives and Outlooks. <i>Pharmaceutics</i> , 2022, 14, 26.	2.0	15
264	Emerging mRNA technologies: delivery strategies and biomedical applications. <i>Chemical Society Reviews</i> , 2022, 51, 3828-3845.	18.7	76
265	Nanodelivery of nucleic acids. <i>Nature Reviews Methods Primers</i> , 2022, 2, .	11.8	146
266	Targeting strategies for mRNA delivery. <i>Materials Today Advances</i> , 2022, 14, 100240.	2.5	15
267	Overcoming the challenge of long-term storage of mRNA-lipid nanoparticle vaccines. <i>Molecular Therapy</i> , 2022, 30, 1792-1793.	3.7	7
268	Advances in COVID-19 mRNA vaccine development. <i>Signal Transduction and Targeted Therapy</i> , 2022, 7, 94.	7.1	177
269	Gene-Modified Stem Cells for Spinal Cord Injury: a Promising Better Alternative Therapy. <i>Stem Cell Reviews and Reports</i> , 2022, 18, 2662-2682.	1.7	9
270	Hydroxycholesterol substitution in ionizable lipid nanoparticles for mRNA delivery to T cells. <i>Journal of Controlled Release</i> , 2022, 347, 521-532.	4.8	33
271	Rational Design of Bisphosphonate Lipid-like Materials for mRNA Delivery to the Bone Microenvironment. <i>Journal of the American Chemical Society</i> , 2022, 144, 9926-9937.	6.6	46
273	Optimization of Lipid Nanoparticles for saRNA Expression and Cellular Activation Using a Design-of-Experiment Approach. <i>Molecular Pharmaceutics</i> , 2022, 19, 1892-1905.	2.3	30
275	mRNA-based therapeutics: powerful and versatile tools to combat diseases. <i>Signal Transduction and Targeted Therapy</i> , 2022, 7, .	7.1	160
276	Advances in mRNA vaccines. <i>International Review of Cell and Molecular Biology</i> , 2022, , 295-316.	1.6	9
277	Lipid-Nanoparticle-Based Delivery of CRISPR/Cas9 Genome-Editing Components. <i>Molecular Pharmaceutics</i> , 2022, 19, 1669-1686.	2.3	58
278	Photocaged 5' cap analogues for optical control of mRNA translation in cells. <i>Nature Chemistry</i> , 2022, 14, 905-913.	6.6	29



#	ARTICLE	IF	CITATIONS
279	Lipid Nanoparticle Technologies for Nucleic Acid Delivery: A Nanoarchitectonics Perspective. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	36
280	Synchronizing the release rates of topotecan and paclitaxel from a self-eroding crosslinked chitosan " PLGA platform. <i>International Journal of Pharmaceutics</i> , 2022, 623, 121945.	2.6	2
281	mRNA delivery technologies: Toward clinical translation. <i>International Review of Cell and Molecular Biology</i> , 2022, , 207-293.	1.6	5
282	Ionizable Lipid Nanoparticle-Mediated Delivery of Plasmid DNA in Cardiomyocytes. <i>International Journal of Nanomedicine</i> , 0, Volume 17, 2865-2881.	3.3	16
283	mRNA-LNP vaccines tuned for systemic immunization induce strong antitumor immunity by engaging splenic immune cells. <i>Molecular Therapy</i> , 2022, 30, 3078-3094.	3.7	45
284	Recent Advances in the Molecular Design and Delivery Technology of mRNA for Vaccination Against Infectious Diseases. <i>Frontiers in Immunology</i> , 0, 13, .	2.2	7
285	Optimization of Lipid Nanoformulations for Effective mRNA Delivery. <i>International Journal of Nanomedicine</i> , 0, Volume 17, 2893-2905.	3.3	13
286	In Cellulo and In Vivo Comparison of Cholesterol, Beta-Sitosterol and Dioleoylphosphatidylethanolamine for Lipid Nanoparticle Formulation of mRNA. <i>Nanomaterials</i> , 2022, 12, 2446.	1.9	6
287	Therapeutic in vivo delivery of gene editing agents. <i>Cell</i> , 2022, 185, 2806-2827.	13.5	131
288	Lipid nanoparticles in the development of mRNA vaccines for COVID-19. <i>Journal of Drug Delivery Science and Technology</i> , 2022, 74, 103553.	1.4	44
289	Lipid-peptide nanocomplexes for mRNA delivery in vitro and in vivo. <i>Journal of Controlled Release</i> , 2022, 348, 786-797.	4.8	16
290	The role of lipid components in lipid nanoparticles for vaccines and gene therapy. <i>Advanced Drug Delivery Reviews</i> , 2022, 188, 114416.	6.6	192
291	Massively parallel pooled screening reveals genomic determinants of nanoparticle delivery. <i>Science</i> , 2022, 377, .	6.0	72
292	mRNA Vaccines Against SARS-CoV-2 Variants Delivered by Lipid Nanoparticles Based on Novel Ionizable Lipids. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	31
293	mRNA-based modalities for infectious disease management. <i>Nano Research</i> , 2023, 16, 672-691.	5.8	7
294	Delivering the Promise of Gene Therapy with Nanomedicines in Treating Central Nervous System Diseases. <i>Advanced Science</i> , 2022, 9, .	5.6	19
295	Material Design for Next-Generation mRNA Vaccines Using Lipid Nanoparticles. <i>Polymer Reviews</i> , 2023, 63, 394-436.	5.3	5
296	Piperazine-derived lipid nanoparticles deliver mRNA to immune cells in vivo. <i>Nature Communications</i> , 2022, 13, .	5.8	47

#	ARTICLE	IF	CITATIONS
297	Emerging trends of research on mRNA vaccines: A co-citation analysis. <i>Human Vaccines and Immunotherapeutics</i> , 2022, 18, .	1.4	1
298	Formulation Strategies to Enable Delivery of Therapeutic Peptides across Cell Membranes. <i>ACS Symposium Series</i> , 0, , 223-254.	0.5	0
299	Chemically modified in-vitro-transcribed mRNA encoding thrombopoietin stimulates thrombopoiesis in mice. <i>Molecular Therapy - Nucleic Acids</i> , 2022, 29, 657-671.	2.3	4
300	A lipid nanoparticle platform for mRNA delivery through repurposing of cationic amphiphilic drugs. <i>Journal of Controlled Release</i> , 2022, 350, 256-270.	4.8	23
301	Intracellular delivery of messenger RNA to macrophages with surfactant-derived lipid nanoparticles. <i>Materials Today Advances</i> , 2022, 16, 100295.	2.5	3
302	Healthspan Extension through Innovative Genetic Medicines. <i>Plastic and Reconstructive Surgery</i> , 2022, 150, 49S-57S.	0.7	3
303	Current knowledge on the tissue distribution of mRNA nanocarriers for therapeutic protein expression. <i>Biomaterials Science</i> , 2022, 10, 6077-6115.	2.6	3
304	Lipid Nanoparticle-Mediated Delivery of Therapeutic and Prophylactic mRNA: Immune Activation by Ionizable Cationic Lipids. <i>RNA Technologies</i> , 2022, , 237-255.	0.2	1
305	Advances in mRNA Delivery and Clinical Applications. <i>RNA Technologies</i> , 2022, , 277-305.	0.2	0
306	Synthetic mRNA Gene Therapies and Hepatotropic Non-viral Vectors for the Treatment of Chronic HBV Infections. <i>RNA Technologies</i> , 2022, , 157-179.	0.2	0
307	Effects of the structure of lipid-based agents in their complexation with a single stranded mRNA fragment: a computational study. <i>Soft Matter</i> , 2022, 18, 6229-6245.	1.2	0
308	Applications and challenges of biomaterial mediated mRNA delivery. <i>Exploration of Targeted Anti-tumor Therapy</i> , 0, , 428-444.	0.5	5
309	Microfluidic Manufacture of Lipid-Based Nanomedicines. <i>Pharmaceutics</i> , 2022, 14, 1940.	2.0	13
310	Design and lyophilization of lipid nanoparticles for mRNA vaccine and its robust immune response in mice and nonhuman primates. <i>Molecular Therapy - Nucleic Acids</i> , 2022, 30, 226-240.	2.3	19
311	Leveraging Biological Buffers for Efficient Messenger RNA Delivery via Lipid Nanoparticles. <i>Molecular Pharmaceutics</i> , 2022, 19, 4275-4285.	2.3	10
312	Development of amino acid-modified biodegradable lipid nanoparticles for siRNA delivery. <i>Acta Biomaterialia</i> , 2022, 154, 374-384.	4.1	6
313	Phosphatidylserine Lipid Nanoparticles Promote Systemic RNA Delivery to Secondary Lymphoid Organs. <i>Nano Letters</i> , 2022, 22, 8304-8311.	4.5	38
314	Enzyme-Catalyzed One-Step Synthesis of Ionizable Cationic Lipids for Lipid Nanoparticle-Based mRNA COVID-19 Vaccines. <i>ACS Nano</i> , 2022, 16, 18936-18950.	7.3	22

#	ARTICLE	IF	CITATIONS
315	Efficacy increase of lipid nanoparticles <i>in vivo</i> by inclusion of bis(monoacylglycerol)phosphate. <i>Nanomedicine</i> , 0, , .	1.7	0
316	Lipidoid nanoparticles increase ATP uptake into hypoxic brain endothelial cells. <i>European Journal of Pharmaceutics and Biopharmaceutics</i> , 2022, 180, 238-250.	2.0	3
317	Recent approaches to mRNA vaccine delivery by lipid-based vectors prepared by continuous-flow microfluidic devices. <i>Future Medicinal Chemistry</i> , 2022, 14, 1561-1581.	1.1	7
318	Success of nano-vaccines against COVID-19: a transformation in nanomedicine. <i>Expert Review of Vaccines</i> , 2022, 21, 1739-1761.	2.0	2
319	Lipid Nanoparticle Delivery System for mRNA Encoding B7H3-redirected Bispecific Antibody Displays Potent Antitumor Effects on Malignant Tumors. <i>Advanced Science</i> , 2023, 10, .	5.6	17
320	Engineered ionizable lipid nanoparticles mediated efficient siRNA delivery to macrophages for anti-inflammatory treatment of acute liver injury. <i>International Journal of Pharmaceutics</i> , 2023, 631, 122489.	2.6	7
321	Substituting racemic ionizable lipids with stereopure ionizable lipids can increase mRNA delivery. <i>Journal of Controlled Release</i> , 2023, 353, 270-277.	4.8	11
322	Polymer- and lipid-based gene delivery technology for CAR T cell therapy. <i>Journal of Controlled Release</i> , 2023, 353, 196-215.	4.8	11
323	Lipid nanoparticle-based mRNA candidates elicit potent T cell responses. <i>Biomaterials Science</i> , 2023, 11, 964-974.	2.6	15
324	Nanoformulations targeting immune cells for cancer therapy: mRNA therapeutics. <i>Bioactive Materials</i> , 2023, 23, 438-470.	8.6	13
325	siRNA Functionalized Lipid Nanoparticles (LNPs) in Management of Diseases. <i>Pharmaceutics</i> , 2022, 14, 2520.	2.0	15
326	A Polymeric Nanoparticle Formulation for Targeted mRNA Delivery to Fibroblasts. <i>Advanced Science</i> , 2023, 10, .	5.6	6
327	Recent Advances in Lipid Nanoparticles for Delivery of mRNA. <i>Pharmaceutics</i> , 2022, 14, 2682.	2.0	22
328	Lipid Nanoparticles and Liposomes for Bone Diseases Treatment. <i>Biomedicines</i> , 2022, 10, 3158.	1.4	5
329	Synthetic mRNA rescues very long-chain acyl-CoA dehydrogenase deficiency in patient fibroblasts and a murine model. <i>Molecular Genetics and Metabolism</i> , 2023, 138, 106982.	0.5	3
331	Nanoparticle-induced immune response: Health risk versus treatment opportunity?. <i>Immunobiology</i> , 2023, 228, 152317.	0.8	7
332	Leaching rate of Diethylhexyl Phthalate (DEHP) from PVC containers with IV administrated lipid nanoparticle formulations. <i>Journal of Drug Delivery Science and Technology</i> , 2023, , 104160.	1.4	0
333	Self-Amplifying RNA Vaccine Candidates: Alternative Platforms for mRNA Vaccine Development. <i>Pathogens</i> , 2023, 12, 138.	1.2	15

#	ARTICLE	IF	CITATIONS
334	Optimal delivery strategies for nanoparticle-mediated mRNA delivery. <i>Journal of Materials Chemistry B</i> , 2023, 11, 2063-2077.	2.9	4
335	The Delivery of ABE mRNA to the Adult Murine Liver by Lipid Nanoparticles (LNPs). <i>Methods in Molecular Biology</i> , 2023, , 159-170.	0.4	1
336	Overcoming Pharmaceutical Bottlenecks for Nucleic Acid Drug Development. <i>Accounts of Chemical Research</i> , 2023, 56, 224-236.	7.6	10
337	Lipid nanoparticle-mediated mRNA delivery in lung fibrosis. <i>European Journal of Pharmaceutical Sciences</i> , 2023, 183, 106370.	1.9	9
338	Bioinspired Lipid Nanocarriers for RNA Delivery. <i>ACS Bio &amp; Med Chem Au</i> , 2023, 3, 114-136.	1.7	8
339	Non-viral nucleic acid delivery approach: A boon for state-of-the-art gene delivery. <i>Journal of Drug Delivery Science and Technology</i> , 2023, 80, 104152.	1.4	1
340	Microfluidic Post-Insertion Method for the Efficient Preparation of PEGylated Liposomes Using High Functionality and Quality Lipids. <i>International Journal of Nanomedicine</i> , 0, Volume 17, 6675-6686.	3.3	2
341	mRNA—From COVID-19 Treatment to Cancer Immunotherapy. <i>Biomedicines</i> , 2023, 11, 308.	1.4	3
342	Passive, active and endogenous organ-targeted lipid and polymer nanoparticles for delivery of genetic drugs. <i>Nature Reviews Materials</i> , 2023, 8, 282-300.	23.3	88
343	Unsaturated, Trialkyl Ionizable Lipids are Versatile Lipid—Nanoparticle Components for Therapeutic and Vaccine Applications. <i>Advanced Materials</i> , 0, , 2209624.	11.1	17
344	Ionizable lipid nanoparticles deliver mRNA to pancreatic $\hat{I}^2$ cells via macrophage-mediated gene transfer. <i>Science Advances</i> , 2023, 9, .	4.7	35
345	Analysis of PEG-lipid anchor length on lipid nanoparticle pharmacokinetics and activity in a mouse model of traumatic brain injury. <i>Biomaterials Science</i> , 2023, 11, 4238-4253.	2.6	8
346	The development of highly dense highly protected surfactant ionizable lipid RNA loaded nanoparticles. <i>Frontiers in Immunology</i> , 0, 14, .	2.2	3
347	mRNA-Based Therapeutics in Cancer Treatment. <i>Pharmaceutics</i> , 2023, 15, 622.	2.0	11
348	Combined therapy with pioglitazone and FGF21 mRNA synergistically ameliorates metabolic disorders in NAFLD rats. <i>Heliyon</i> , 2023, 9, e15146.	1.4	0
349	Targeted siRNA lipid nanoparticles for the treatment of KRAS-mutant tumors. <i>Journal of Controlled Release</i> , 2023, 357, 67-83.	4.8	13
350	Lipid nanoparticle-encapsulated mRNA therapy corrects serum total bilirubin level in Crigler-Najjar syndrome mouse model. <i>Molecular Therapy - Methods and Clinical Development</i> , 2023, 29, 32-39.	1.8	2
351	Development and applications of mRNA treatment based on lipid nanoparticles. <i>Biotechnology Advances</i> , 2023, 65, 108130.	6.0	10

#	ARTICLE	IF	CITATIONS
352	Design of lipid-based nanoparticles for delivery of therapeutic nucleic acids. <i>Drug Discovery Today</i> , 2023, 28, 103505.	3.2	14
353	Vaccine Formulation Strategies and Challenges Involved in RNA Delivery for Modulating Biomarkers of Cardiovascular Diseases: A Race from Laboratory to Market. <i>Vaccines</i> , 2023, 11, 241.	2.1	1
354	High-Precision Synthesis of RNA-Loaded Lipid Nanoparticles for Biomedical Applications. <i>Advanced Healthcare Materials</i> , 2023, 12, .	3.9	11
355	CAR-T-Derived Extracellular Vesicles: A Promising Development of CAR-T Anti-Tumor Therapy. <i>Cancers</i> , 2023, 15, 1052.	1.7	4
356	Liver Cancer and the Curative Potential of Nanomedicine. , 2023, , 283-306.		0
357	Meeting vaccine formulation challenges in an emergency setting: Towards the development of accessible vaccines. <i>Pharmacological Research</i> , 2023, 189, 106699.	3.1	1
358	Ionizable Lipid Nanoparticles for <i>In Vivo</i> mRNA Delivery to the Placenta during Pregnancy. <i>Journal of the American Chemical Society</i> , 2023, 145, 4691-4706.	6.6	36
359	Non-invasive PTEN mRNA brain delivery effectively mitigates growth of orthotopic glioblastoma. <i>Nano Today</i> , 2023, 49, 101790.	6.2	12
360	Recent advances in using liposomes for delivery of nucleic acid-based therapeutics. <i>OpenNano</i> , 2023, 11, 100132.	1.8	16
361	Research Advances on the Stability of mRNA Vaccines. <i>Viruses</i> , 2023, 15, 668.	1.5	14
362	Recent Advances in the Lipid Nanoparticle-Mediated Delivery of mRNA Vaccines. <i>Vaccines</i> , 2023, 11, 658.	2.1	8
363	Precise and systematic end group chemistry modifications on PAMAM and poly(l-lysine) dendrimers to improve cytosolic delivery of mRNA. <i>Journal of Controlled Release</i> , 2023, 356, 580-594.	4.8	17
364	Impact of non-ionizable lipids and phase mixing methods on structural properties of lipid nanoparticle formulations. <i>International Journal of Pharmaceutics</i> , 2023, 637, 122874.	2.6	5
366	Use of Microfluidics to Prepare Lipid-Based Nanocarriers. <i>Pharmaceutics</i> , 2023, 15, 1053.	2.0	7
367	Influence of lipid composition of messenger RNA-loaded lipid nanoparticles on the protein expression via intratracheal administration in mice. <i>International Journal of Pharmaceutics</i> , 2023, 637, 122896.	2.6	3
368	Non-Viral Nucleic Acid Delivery System for RNA Therapeutics. <i>Advanced Therapeutics</i> , 2023, 6, .	1.6	2
369	Combinatorial design of nanoparticles for pulmonary mRNA delivery and genome editing. <i>Nature Biotechnology</i> , 2023, 41, 1410-1415.	9.4	54
370	Next-generation materials for RNA-lipid nanoparticles: lyophilization and targeted transfection. <i>Journal of Materials Chemistry B</i> , 2023, 11, 5083-5093.	2.9	1

#	ARTICLE	IF	CITATIONS
371	Key Design Features of Lipid Nanoparticles and Electrostatic Charge-Based Lipid Nanoparticle Targeting. <i>Pharmaceutics</i> , 2023, 15, 1184.	2.0	4
372	A fluorinated ionizable lipid improves the mRNA delivery efficiency of lipid nanoparticles. <i>Journal of Materials Chemistry B</i> , 2023, 11, 4171-4180.	2.9	6
373	NAD depletion mediates cytotoxicity in human neurons with autophagy deficiency. <i>Cell Reports</i> , 2023, 42, 112372.	2.9	10
390	PEGylated Lipid Nanoparticle Formulations: Immunological Safety and Efficiency Perspective. <i>Bioconjugate Chemistry</i> , 2023, 34, 941-960.	1.8	22
402	Adjuvant physiochemistry and advanced nanotechnology for vaccine development. <i>Chemical Society Reviews</i> , 2023, 52, 5172-5254.	18.7	7
403	Development and Application of Nano-lubricant in Machining: A Review. <i>Studies in Systems, Decision and Control</i> , 2023, , 41-60.	0.8	0
415	Immunogenicity of lipid nanoparticles and its impact on the efficacy of mRNA vaccines and therapeutics. <i>Experimental and Molecular Medicine</i> , 2023, 55, 2085-2096.	3.2	11
419	Circular RNA vaccine in disease prevention and treatment. <i>Signal Transduction and Targeted Therapy</i> , 2023, 8, .	7.1	3
457	Therapeutic synthetic and natural materials for immunoengineering. <i>Chemical Society Reviews</i> , 2024, 53, 1789-1822.	18.7	0
458	Strategies to reduce the risks of mRNA drug and vaccine toxicity. <i>Nature Reviews Drug Discovery</i> , 2024, 23, 281-300.	21.5	2
463	Self-assembled structures as emerging cellular scaffolds. , 2024, , 175-205.		0
469	Nano-Bio Interactions: Exploring the Biological Behavior and the Fate of Lipid-Based Gene Delivery Systems. <i>BioDrugs</i> , 2024, 38, 259-273.	2.2	0