Pieter Cullis

List of Publications by Year
in descending order

132 papers	31,790 citations	10986 71 h-index	12272 133 g-index
135 all docs	135 docs citations	135 times ranked	25228 citing authors

#	Article	IF	Citations
1	Drug Delivery Systems: Entering the Mainstream. Science, 2004, 303, 1818-1822.	12.6	4,028
2	Liposomal drug delivery systems: From concept to clinical applications. Advanced Drug Delivery Reviews, 2013, 65, 36-48.	13.7	3,565
3	Production of large unilamellar vesicles by a rapid extrusion procedure. Characterization of size distribution, trapped volume and ability to maintain a membrane potential. Biochimica Et Biophysica Acta - Biomembranes, 1985, 812, 55-65.	2.6	1,845
4	Lipid polymorphism and the functional roles of lipids in biological membranes. BBA - Biomembranes, 1979, 559, 399-420.	8.0	1,711
5	Vesicles of variable sizes produced by a rapid extrusion procedure. Biochimica Et Biophysica Acta - Biomembranes, 1986, 858, 161-168.	2.6	1,535
6	Rational design of cationic lipids for siRNA delivery. Nature Biotechnology, 2010, 28, 172-176.	17.5	1,366
7	Maximizing the Potency of siRNA Lipid Nanoparticles for Hepatic Gene Silencing Inâ€…Vivo**. Angewandte Chemie - International Edition, 2012, 51, 8529-8533.	13.8	843
8	The Onpattro story and the clinical translation of nanomedicines containing nucleic acid-based drugs. Nature Nanotechnology, 2019, 14, 1084-1087.	31.5	814
9	Lipid Nanoparticle Systems for Enabling Gene Therapies. Molecular Therapy, 2017, 25, 1467-1475.	8.2	632
10	The current landscape of nucleic acid therapeutics. Nature Nanotechnology, 2021, 16, 630-643.	31.5	578
11	On the mechanism whereby cationic lipids promote intracellular delivery of polynucleic acids. Gene Therapy, 2001, 8, 1188-1196.	4.5	508
12	Microfluidic Synthesis of Highly Potent Limit-size Lipid Nanoparticles for In Vivo Delivery of siRNA. Molecular Therapy - Nucleic Acids, 2012, 1, e37.	5.1	445
13	The polymorphic phase behaviour of phosphatidylethanolamines of natural and synthetic origin. A 31P NMR study. Biochimica Et Biophysica Acta - Biomembranes, 1978, 513, 31-42.	2.6	402
14	Biodegradable Lipids Enabling Rapidly Eliminated Lipid Nanoparticles for Systemic Delivery of RNAi Therapeutics. Molecular Therapy, 2013, 21, 1570-1578.	8.2	392
15	Interactions of liposomes and lipid-based carrier systems with blood proteins: Relation to clearance behaviour in vivo. Advanced Drug Delivery Reviews, 1998, 32, 3-17.	13.7	344
16	Efficient encapsulation of antisense oligonucleotides in lipid vesicles using ionizable aminolipids: formation of novel small multilamellar vesicle structures. Biochimica Et Biophysica Acta - Biomembranes, 2001, 1510, 152-166.	2.6	344
17	Association of blood proteins with large unilamellar liposomes in vivo. Relation to circulation lifetimes. Journal of Biological Chemistry, 1992, 267, 18759-65.	3.4	338
18	Lipid Nanoparticles Enabling Gene Therapies: From Concepts to Clinical Utility. Nucleic Acid Therapeutics, 2018, 28, 146-157.	3.6	335

#	Article	IF	Citations
19	Lipid polymorphism and the roles of lipids in membranes. Chemistry and Physics of Lipids, 1986, 40, 127-144.	3.2	321
20	Uptake of adriamycin into large unilamellar vesicles in response to a pH gradient. Biochimica Et Biophysica Acta - Biomembranes, 1986, 857, 123-126.	2.6	319
21	On the Formation and Morphology of Lipid Nanoparticles Containing Ionizable Cationic Lipids and siRNA. ACS Nano, 2018, 12, 4787-4795.	14.6	319
22	Effects of fusogenic agent on membrane structure of erythrocyte ghosts and the mechanism of membrane fusion. Nature, 1978, 271, 672-674.	27.8	307
23	X-ray diffraction study of the polymorphic behavior of N-methylated dioleoylphosphatidylethanolamine. Biochemistry, 1988, 27, 2853-2866.	2.5	280
24	Stabilized plasmid-lipid particles: construction and characterization. Gene Therapy, 1999, 6, 271-281.	4.5	280
25	Developments in liposomal drug delivery systems. Expert Opinion on Biological Therapy, 2001, 1, 923-947.	3.1	272
26	Lipid Nanoparticle Technology for Clinical Translation of siRNA Therapeutics. Accounts of Chemical Research, 2019, 52, 2435-2444.	15.6	270
27	Influence of vesicle size, lipid composition, and drug-to-lipid ratio on the biological activity of liposomal doxorubicin in mice. Cancer Research, 1989, 49, 5922-30.	0.9	268
28	Lipid Polymorphism:The Molecular Basis of Nonbilayer Phases. Annual Review of Biophysics and Biophysical Chemistry, 1985, 14, 211-238.	12.2	266
29	The role of surface charge in the activation of the classical and alternative pathways of complement by liposomes. Journal of Immunology, 1991, 146, 4234-41.	0.8	251
30	Bottom-Up Design and Synthesis of Limit Size Lipid Nanoparticle Systems with Aqueous and Triglyceride Cores Using Millisecond Microfluidic Mixing. Langmuir, 2012, 28, 3633-3640.	3.5	250
31	Influence of Polyethylene Glycol Lipid Desorption Rates on Pharmacokinetics and Pharmacodynamics of siRNA Lipid Nanoparticles. Molecular Therapy - Nucleic Acids, 2013, 2, e139.	5.1	241
32	Lipid Nanoparticles Containing siRNA Synthesized by Microfluidic Mixing Exhibit an Electron-Dense Nanostructured Core. Journal of Physical Chemistry C, 2012, 116, 18440-18450.	3.1	232
33	The accumulation of drugs within large unilamellar vesicles exhibiting a proton gradient: a survey. Chemistry and Physics of Lipids, 1990, 53, 37-46.	3.2	231
34	Influence of Cholesterol on the Association of Plasma Proteins with Liposomes. Biochemistry, 1996, 35, 2521-2525.	2.5	231
35	Roles of lipid polymorphism in intracellular delivery. Advanced Drug Delivery Reviews, 2001, 47, 139-148.	13.7	231
36	Lipid-Based DNA Therapeutics: Hallmarks of Non-Viral Gene Delivery. ACS Nano, 2019, 13, 3754-3782.	14.6	220

#	Article	IF	Citations
37	Smoothed orientational order profile of lipid bilayers by 2H-nuclear magnetic resonance. Biophysical Journal, 1989, 56, 1037-1041.	0.5	219
38	Characterization of liposomal systems containing doxorubicin entrapped in response to pH gradients. Biochimica Et Biophysica Acta - Biomembranes, 1990, 1025, 143-151.	2.6	216
39	Influence of particle size on the in vivo potency of lipid nanoparticle formulations of siRNA. Journal of Controlled Release, 2016, 235, 236-244.	9.9	204
40	Microfluidic Mixing: A General Method for Encapsulating Macromolecules in Lipid Nanoparticle Systems. Journal of Physical Chemistry B, 2015, 119, 8698-8706.	2.6	203
41	Poly(ethylene glycol)â^'Lipid Conjugates Regulate the Calcium-Induced Fusion of Liposomes Composed of Phosphatidylethanolamine and Phosphatidylserine. Biochemistry, 1996, 35, 2618-2624.	2.5	198
42	The Cellular Mechanisms of Neuronal Swelling Underlying Cytotoxic Edema. Cell, 2015, 161, 610-621.	28.9	197
43	Spontaneous Entrapment of Polynucleotides upon Electrostatic Interaction with Ethanol-Destabilized Cationic Liposomes. Biophysical Journal, 2001, 80, 2310-2326.	0.5	193
44	Lipid nanoparticle technology for therapeutic gene regulation in the liver. Advanced Drug Delivery Reviews, 2020, 159, 344-363.	13.7	187
45	31P NMR studies of unsonicated aqueous dispersions of neutral and acidic phospholipids. Effects of phase transitions, p2H and divalent cations on the motion in the phosphate region of the polar headgroup. Biochimica Et Biophysica Acta - Biomembranes, 1976, 436, 523-540.	2.6	184
46	On the role of helper lipids in lipid nanoparticle formulations of siRNA. Nanoscale, 2019, 11, 21733-21739.	5.6	176
47	Advances in Lipid Nanoparticles for siRNA Delivery. Pharmaceutics, 2013, 5, 498-507.	4.5	169
48	Stateâ€ofâ€theâ€Art Design and Rapidâ€Mixing Production Techniques of Lipid Nanoparticles for Nucleic Acid Delivery. Small Methods, 2018, 2, 1700375.	8.6	165
49	Influence of Cationic Lipid Composition on Gene Silencing Properties of Lipid Nanoparticle Formulations of siRNA in Antigen-Presenting Cells. Molecular Therapy, 2011, 19, 2186-2200.	8.2	153
50	Systemic Gene Silencing in Primary T Lymphocytes Using Targeted Lipid Nanoparticles. ACS Nano, 2015, 9, 6706-6716.	14.6	146
51	Stabilized plasmid-lipid particles for systemic gene therapy. Gene Therapy, 2000, 7, 1867-1874.	4.5	144
52	Lipid nanoparticle delivery systems for siRNA-based therapeutics. Drug Delivery and Translational Research, 2014, 4, 74-83.	5.8	141
53	Structural and fusogenic properties of cationic liposomes in the presence of plasmid DNA. Biophysical Journal, 1997, 73, 2534-2545.	0.5	139
54	Lateral diffusion rates of phosphatidylcholine in vesicle membranes: Eeffects of cholesterol and hydrocarbon phase transitions. FEBS Letters, 1976, 70, 223-228.	2.8	131

#	Article	IF	Citations
55	Lipid Nanoparticle Delivery of siRNA to Silence Neuronal Gene Expression in the Brain. Molecular Therapy - Nucleic Acids, 2013, 2, e136.	5.1	127
56	Design of lipid nanoparticles for in vitro and in vivo delivery of plasmid DNA. Nanomedicine: Nanotechnology, Biology, and Medicine, 2017, 13, 1377-1387.	3.3	122
57	Separation of large unilamellar liposomes from blood components by a spin column procedure: towards identifying plasma proteins which mediate liposome clearance in vivo. Biochimica Et Biophysica Acta - Biomembranes, 1991, 1070, 215-222.	2.6	121
58	The Biomolecular Corona of Lipid Nanoparticles for Gene Therapy. Bioconjugate Chemistry, 2020, 31, 2046-2059.	3.6	120
59	Therapeutically optimized rates of drug release can be achieved by varying the drug-to-lipid ratio in liposomal vincristine formulations. Biochimica Et Biophysica Acta - Biomembranes, 2006, 1758, 55-64.	2.6	118
60	Systemic RNAi-mediated Gene Silencing in Nonhuman Primate and Rodent Myeloid Cells. Molecular Therapy - Nucleic Acids, 2012, 1, e4.	5.1	112
61	Modulation of Membrane Fusion by Asymmetric Transbilayer Distributions of Amino Lipids. Biochemistry, 1994, 33, 12573-12580.	2.5	110
62	Encapsulation in liposomal nanoparticles enhances the immunostimulatory, adjuvant and anti-tumor activity of subcutaneously administered CpG ODN. Cancer Immunology, Immunotherapy, 2007, 56, 1251-1264.	4.2	109
63	Lipid Nanoparticles for Short Interfering RNA Delivery. Advances in Genetics, 2014, 88, 71-110.	1.8	109
64	Development of lipid nanoparticle formulations of siRNA for hepatocyte gene silencing following subcutaneous administration. Journal of Controlled Release, 2014, 196, 106-112.	9.9	108
65	Anomalous solubility behavior of the antibiotic ciprofloxacin encapsulated in liposomes: a 1H-NMR study. Biochimica Et Biophysica Acta - Biomembranes, 1998, 1374, 9-20.	2.6	106
66	Liposomal vincristine which exhibits increased drug retention and increased circulation longevity cures mice bearing P388 tumors. Cancer Research, 1994, 54, 2830-3.	0.9	106
67	The bilayer stabilizing role of sphingomyelin in the presence of cholesterol. A 31P NMR study. Biochimica Et Biophysica Acta - Biomembranes, 1980, 597, 533-542.	2.6	93
68	Fusion-dependent formation of lipid nanoparticles containing macromolecular payloads. Nanoscale, 2019, 11, 9023-9031.	5.6	85
69	Lipid-based systems for the intracellular delivery of genetic drugs. Molecular Membrane Biology, 1999, 16, 129-140.	2.0	82
70	Development of a weak-base docetaxel derivative that can be loaded into lipid nanoparticles. Journal of Controlled Release, 2010, 144, 332-340.	9.9	78
71	Lipid nanoparticle siRNA systems for silencing the androgen receptor in human prostate cancer in vivo. International Journal of Cancer, 2012, 131, E781-90.	5.1	73
72	Influence of Drug-to-Lipid Ratio on Drug Release Properties and Liposome Integrity in Liposomal Doxorubicin Formulations. Journal of Liposome Research, 2008, 18, 145-157.	3.3	72

#	Article	IF	Citations
73	Acyl chain orientational order in the hexagonal HII phase of phospholipid-water dispersions. Biophysical Journal, 1988, 54, 689-694.	0.5	68
74	Optimization of the retention properties of vincristine in liposomal systems. Biochimica Et Biophysica Acta - Biomembranes, 1993, 1152, 253-258.	2.6	67
75	Influence of cationic lipid composition on uptake and intracellular processing of lipid nanoparticle formulations of siRNA. Nanomedicine: Nanotechnology, Biology, and Medicine, 2013, 9, 233-246.	3.3	67
76	Anionic Lipid Nanoparticles Preferentially Deliver mRNA to the Hepatic Reticuloendothelial System. Advanced Materials, 2022, 34, e2201095.	21.0	66
77	Effects of intravenous and subcutaneous administration on the pharmacokinetics, biodistribution, cellular uptake and immunostimulatory activity of CpG ODN encapsulated in liposomal nanoparticles. International Immunopharmacology, 2007, 7, 1064-1075.	3.8	65
78	[3] Stabilized plasmid-lipid particles: A systemic gene therapy vector. Methods in Enzymology, 2002, 346, 36-71.	1.0	63
79	Comparison of the orientational order of lipid chains in the L.alpha. and HII phases. Biochemistry, 1990, 29, 8325-8333.	2.5	62
80	Lipid nanoparticle-mediated siRNA delivery for safe targeting of human CML in vivo. Annals of Hematology, 2019, 98, 1905-1918.	1.8	61
81	siRNA Lipid Nanoparticle Potently Silences Clusterin and Delays Progression When Combined with Androgen Receptor Cotargeting in Enzalutamide-Resistant Prostate Cancer. Clinical Cancer Research, 2015, 21, 4845-4855.	7.0	60
82	Systemic study of solvent-assisted active loading of gambogic acid into liposomes and its formulation optimization for improved delivery. Biomaterials, 2018, 166, 13-26.	11.4	60
83	Formation of drugâ€“arylsulfonate complexes inside liposomes: A novel approach to improve drug retention. Journal of Controlled Release, 2006, 110, 378-386.	9.9	58
84	Correlation between lipid plane curvature and lipid chain order. Biophysical Journal, 1996, 70, 2747-2757.	0.5	56
85	Characterization of Lipid Nanoparticles Containing Ionizable Cationic Lipids Using Design-of-Experiments Approach. Langmuir, 2021, 37, 1120-1128.	3.5	50
86	pH-Induced destabilization of lipid bilayers by a lipopeptide derived from influenza hemagglutinin. Biochimica Et Biophysica Acta - Biomembranes, 1997, 1324, 232-244.	2.6	46
87	Rapid synthesis of lipid nanoparticles containing hydrophobic inorganic nanoparticles. Nanoscale, 2017, 9, 13600-13609.	5.6	46
88	Ionizable amino lipid interactions with POPC: implications for lipid nanoparticle function. Nanoscale, 2019, 11, 14141-14146.	5.6	46
89	Robust Microfluidic Technology and New Lipid Composition for Fabrication of Curcumin-Loaded Liposomes: Effect on the Anticancer Activity and Safety of Cisplatin. Molecular Pharmaceutics, 2019, 16, 3957-3967.	4.6	44
90	Dexamethasone prodrugs as potent suppressors of the immunostimulatory effects of lipid nanoparticle formulations of nucleic acids. Journal of Controlled Release, 2018, 286, 46-54.	9.9	42

#	Article	IF	Citations
91	Vincristine-induced dermal toxicity is significantly reduced when the drug is given in liposomes. Cancer Chemotherapy and Pharmacology, 1996, 37, 351-355.	2.3	39
92	Lipid Nanoparticle Delivery of siRNA to Osteocytes Leads to Effective Silencing of SOST and Inhibition of Sclerostin In Vivo. Molecular Therapy - Nucleic Acids, 2016, 5, e363.	5.1	38
93	The Niemann-Pick C1 Inhibitor NP3.47 Enhances Gene Silencing Potency of Lipid Nanoparticles Containing siRNA. Molecular Therapy, 2016, 24, 2100-2108.	8.2	38
94	Coating of PLA-nanoparticles with cyclic, arginine-rich cell penetrating peptides enables oral delivery of liraglutide. Nanomedicine: Nanotechnology, Biology, and Medicine, 2020, 24, 102132.	3.3	38
95	Ca_V3.2 drives sustained burstâ€firing, which is critical for absence seizure propagation in reticular thalamic neurons. Epilepsia, 2018, 59, 778-791.	5.1	36
96	Spontaneous, solvent-free entrapment of siRNA within lipid nanoparticles. Nanoscale, 2020, 12, 23959-23966.	5.6	36
97	Optimized Photoactivatable Lipid Nanoparticles Enable Red Light Triggered Drug Release. Small, 2021, 17, e2008198.	10.0	36
98	A Glu-urea-Lys Ligand-conjugated Lipid Nanoparticle/siRNA System Inhibits Androgen Receptor Expression In Vivo. Molecular Therapy - Nucleic Acids, 2016, 5, e348.	5.1	35
99	Small molecule ligands for enhanced intracellular delivery of lipid nanoparticle formulations of siRNA. Nanomedicine: Nanotechnology, Biology, and Medicine, 2013, 9, 665-674.	3.3	34
100	A two-step targeting approach for delivery of doxorubicin-loaded liposomes to tumour cells in vivo. Cancer Chemotherapy and Pharmacology, 1995, 36, 91-101.	2.3	30
101	Modular Lipid Nanoparticle Platform Technology for siRNA and Lipophilic Prodrug Delivery. Small, 2021, 17, e2103025.	10.0	29
102	PIAS1 modulates striatal transcription, DNA damage repair, and SUMOylation with relevance to Huntingtonâ€™s disease. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	28
103	Production of limit size nanoliposomal systems with potential utility as ultra-small drug delivery agents. Journal of Liposome Research, 2016, 26, 1-7.	3.3	27
104	â€œDiffusibleâ€PEGâ€Lipid Stabilized Plasmid Lipid Particlesâ€• Advances in Genetics, 2005, 53PA, 157-188.	1.8	25
105	Introducing pharmacogenetic testing with clinical decision support into primary care: a feasibility study. CMAJ Open, 2016, 4, E528-E534.	2.4	25
106	Simultaneous, Single-Particle Measurements of Size and Loading Give Insights into the Structure of Drug-Delivery Nanoparticles. ACS Nano, 2021, 15, 19244-19255.	14.6	23
107	Characterization of a liposomal copper(II)-quercetin formulation suitable for parenteral use. Drug Delivery and Translational Research, 2020, 10, 202-215.	5.8	22
108	Use of a lipid nanoparticle system as a Trojan horse in delivery of gold nanoparticles to human breast cancer cells for improved outcomes in radiation therapy. Cancer Nanotechnology, 2019, 10, .	3.7	21

#	Article	IF	Citations
109	Deep Phenotyping by Mass Cytometry and Single-Cell RNA-Sequencing Reveals LYN-Regulated Signaling Profiles Underlying Monocyte Subset Heterogeneity and Lifespan. Circulation Research, 2020, 126, e61-e79.	4.5	21
110	Density Matching Multi-wavelength Analytical Ultracentrifugation to Measure Drug Loading of Lipid Nanoparticle Formulations. ACS Nano, 2021, 15, 5068-5076.	14.6	21
111	Lipid nanoparticle delivery of glucagon receptor siRNA improves glucose homeostasis in mouse models of diabetes. Molecular Metabolism, 2017, 6, 1161-1172.	6.5	20
112	Ionophore-mediated loading of Ca2+into large unilamellar vesicles in response to transmembrane pH gradients. Molecular Membrane Biology, 1994, 11, 151-157.	2.0	17
113	Endosome marker is fat not fiction. Nature, 1998, 392, 135-136.	27.8	17
114	Sustained depletion of FXIII-A by inducing acquired FXIII-B deficiency. Blood, 2020, 136, 2946-2954.	1.4	17
115	Role of drug delivery technologies in the success of COVID-19 vaccines: a perspective. Drug Delivery and Translational Research, 2022, 12, 2581-2588.	5.8	17
116	Stabilization and Regulated Fusion of Liposomes Containing a Cationic Lipid Using Amphipathic Polyethyleneglycol Derivatives. Journal of Liposome Research, 1998, 8, 195-211.	3.3	16
117	Protective Effect of Edaravone against Cationic Lipid-Mediated Oxidative Stress and Apoptosis. Biological and Pharmaceutical Bulletin, 2021, 44, 144-149.	1.4	14
118	Development of high-concentration lipoplexes for in vivo gene function studies in vertebrate embryos. Developmental Dynamics, 2011, 240, 2108-2119.	1.8	12
119	PhospholipidâEFree Small Unilamellar Vesicles for Drug Targeting to Cells in the Liver. Small, 2019, 15, 1901782.	10.0	12
120	Exciting Times for Lipid Nanoparticles: How Canadian Discoveries Are Enabling Gene Therapies. Molecular Pharmaceutics, 2022, 19, 1663-1668.	4.6	11
121	Commentary: Liposomes by Accident. Journal of Liposome Research, 2000, 10, ix-xxiv.	3.3	10
122	Lipid nanoparticle-mediated silencing of osteogenic suppressor GNAS leads to osteogenic differentiation of mesenchymal stem cells inÂvivo. Molecular Therapy, 2022, 30, 3034-3051.	8.2	10
123	Lipid nanoparticles to silence androgen receptor variants for prostate cancer therapy. Journal of Controlled Release, 2022, 349, 174-183.	9.9	10
124	Structural Properties of Inverted Hexagonal Phase: A Hybrid Computational and Experimental Approach. Langmuir, 2020, 36, 6668-6680.	3.5	9
125	Suppression of fibrin(ogen)-driven pathologies in diseaseÂmodels through controlled knockdown byÂlipidÂnanoparticle delivery of siRNA. Blood, 2022, 139, 1302-1311.	1.4	9
126	Designing therapeutically optimized liposomal anticancer delivery systems: Lessons from conventional liposomes. , 1998, , 231-257.		8

#	Article	IF	Citations
127	Altering the intra-liver distribution of phospholipid-free small unilamellar vesicles using temperature-dependent size-tunability. Journal of Controlled Release, 2021, 333, 151-161.	9.9	8
128	FAM13A as potential therapeutic target in modulating TGF-Î²-induced airway tissue remodeling in COPD. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2021, 321, L377-L391.	2.9	7
129	A model approach for assessing liposome targetingin vivo. Drug Delivery, 1995, 2, 156-165.	5.7	6
130	Improved Liver Delivery of Primaquine by Phospholipid-Free Small Unilamellar Vesicles with Reduced Hemolytic Toxicity. Molecular Pharmaceutics, 2022, 19, 1778-1785.	4.6	3
131	Synthesis and Characterization of Hybrid Lipid Nanoparticles Containing Gold Nanoparticles and a Weak Base Drug. Langmuir, 2022, 38, 7858-7866.	3.5	3
132	Liposomes, dimitri papahadjopoulos, and us. Journal of Liposome Research, 1995, 5, 829-836.	3.3	1