Marie-pierre Rols

List of Publications by Year
in descending order

131	5,444	81900 39	88630 70
papers	citations	h-index	g-index

133	133	133	4073
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	In vivo electrically mediated protein and gene transfer in murine melanoma. Nature Biotechnology, 1998, 16, 168-171.	17.5	393
2	Direct visualization at the single-cell level of electrically mediated gene delivery. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 1292-1297.	7.1	379
3	Electropermeabilization of Mammalian Cells to Macromolecules: Control by Pulse Duration. Biophysical Journal, 1998, 75, 1415-1423.	0.5	295
4	What is (Still not) Known of the Mechanism by Which Electroporation Mediates Gene Transfer and Expression in Cells and Tissues. Molecular Biotechnology, 2009, 41, 286-295.	2.4	231
5	Effect of electric field induced transmembrane potential on spheroidal cells: theory and experiment. European Biophysics Journal, 2003, 32, 519-528.	2.2	197
6	Gene Electrotransfer: A Mechanistic Perspective. Current Gene Therapy, 2016, 16, 98-129.	2.0	168
7	Cell wall as a target for bacteria inactivation by pulsed electric fields. Scientific Reports, 2016, 6, 19778.	3.3	146
8	Control by Osmotic Pressure of Voltage-Induced Permeabilization and Gene Transfer in Mammalian Cells. Biophysical Journal, 1998, 74, 3015-3022.	0.5	126
9	Electropermeabilization, a physical method for the delivery of therapeutic molecules into cells. Biochimica Et Biophysica Acta - Biomembranes, 2006, 1758, 423-428.	2.6	126
10	Electric field-responsive nanoparticles and electric fields: physical, chemical, biological mechanisms and therapeutic prospects. Advanced Drug Delivery Reviews, 2019, 138, 56-67.	13.7	113
11	Ionic-strength modulation of electrically induced permeabilization and associated fusion of mammalian cells. FEBS Journal, 1989, 179, 109-115.	0.2	106
12	Electroâ€mediated gene transfer and expression are controlled by the lifeâ€time of DNA/membrane complex formation. Journal of Gene Medicine, 2010, 12, 117-125.	2.8	104
13	Electrotransfer as a Non Viral Method of Gene Delivery. Current Gene Therapy, 2007, 7, 67-77.	2.0	97
14	Calcium Electroporation: Evidence for Differential Effects in Normal and Malignant Cell Lines, Evaluated in a 3D Spheroid Model. PLoS ONE, 2015, 10, e0144028.	2.5	88
15	Experimental evidence for the involvement of the cytoskeleton in mammalian cell electropermeabilization. Biochimica Et Biophysica Acta - Biomembranes, 1992, 1111, 45-50.	2.6	86
16	Effect of electric field vectoriality on electrically mediated gene delivery in mammalian cells. Biochimica Et Biophysica Acta - Biomembranes, 2004, 1665, 92-100.	2.6	86
17	Electromediated formation of DNA complexes with cell membranes and its consequences for gene delivery. Biochimica Et Biophysica Acta - Biomembranes, 2011, 1808, 1538-1543.	2.6	79
18	Manipulation of Cell Cytoskeleton Affects the Lifetime of Cell Membrane Electropermeabilization. Annals of the New York Academy of Sciences, 1994, 720, 98-110.	3.8	74

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19	EFFICIENCY OF HIGH AND LOW VOLTAGE PULSE COMBINATIONS FOR GENE ELECTROTRANSFER IN MUSCLE, LIVER, TUMOR AND SKIN. Human Gene Therapy, 2008, 19, 081015093227032.	2.7	74
20	A Comparative Study on the Effects of Millisecond- and Microsecond-Pulsed Electric Field Treatments on the Permeabilization and Extraction of Pigments from Chlorella vulgaris. Journal of Membrane Biology, 2015, 248, 883-891.	2.1	73
21	The Actin Cytoskeleton Has an Active Role in the Electrotransfer of Plasmid DNA in Mammalian Cells. Molecular Therapy, 2011, 19, 913-921.	8.2	72
22	Intracellular Tracking of Single-plasmid DNA Particles After Delivery by Electroporation. Molecular Therapy, 2013, 21, 2217-2226.	8.2	72
23	Temperature effects on electrotransfection of mammalian cells. Nucleic Acids Research, 1994, 22, 540-540.	14.5	68
24	Cell synchronization effect on mammalian cell permeabilization and gene delivery by electric field. Biochimica Et Biophysica Acta - Biomembranes, 2002, 1563, 23-28.	2.6	67
25	Antitumor drug delivery in multicellular spheroids by electropermeabilization. Journal of Controlled Release, 2013, 167, 138-147.	9.9	67
26	Control by ATP and ADP of voltage-induced mammalian-cell-membrane permeabilization, gene transfer and resulting expression. FEBS Journal, 1998, 254, 382-388.	0.2	66
27	Gene Transfer: How Can the Biological Barriers Be Overcome?. Journal of Membrane Biology, 2010, 236, 61-74.	2.1	66
28	Endocytosis and Endosomal Trafficking of DNA After Gene Electrotransfer In Vitro. Molecular Therapy - Nucleic Acids, 2016, 5, e286.	5.1	66
29	Electroporation and lipid nanoparticles with cyanine IR-780 and flavonoids as efficient vectors to enhanced drug delivery in colon cancer. Bioelectrochemistry, 2016, 110, 19-31.	4.6	64
30	Visualization of Membrane Loss during the Shrinkage of Giant Vesicles under Electropulsation. Biophysical Journal, 2009, 96, 4109-4121.	0.5	63
31	Polymeric Micelles Encapsulating Photosensitizer: Structure/Photodynamic Therapy Efficiency Relation. Biomacromolecules, 2014, 15, 1443-1455.	5.4	62
32	Nanosecond electric pulses: A mini-review of the present state of the art. Bioelectrochemistry, 2015, 103, 2-6.	4.6	58
33	Electroporator with automatic change of electric field direction improves gene electrotransfer in-vitro. BioMedical Engineering OnLine, 2007, 6, 25.	2.7	55
34	New insights in the visualization of membrane permeabilization and DNA/membrane interaction of cells submitted to electric pulses. Biochimica Et Biophysica Acta - General Subjects, 2005, 1724, 248-254.	2.4	53
35	Electrochemotherapy: Progress and Prospects. Current Pharmaceutical Design, 2012, 18, 3406-3415.	1.9	53
36	Highly efficient transfection of mammalian cells by electric field pulses. Application to large volumes of cell culture by using a flow system. FEBS Journal, 1992, 206, 115-121.	0.2	51

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37	Comparison of Iron Oxide Nanoparticles in Photothermia and Magnetic Hyperthermia: Effects of Clustering and Silica Encapsulation on Nanoparticlesâ€™ Heating Yield. Applied Sciences (Switzerland), 2020, 10, 7322.	2.5	49
38	Effect of different parameters used for in vitro gene electrotransfer on gene expression efficiency, cell viability and visualization of plasmid DNA at the membrane level. Journal of Gene Medicine, 2013, 15, 169-181.	2.8	46
39	Cholesterol implications in plasmid DNA electrotransfer: Evidence for the involvement of endocytotic pathways. International Journal of Pharmaceutics, 2012, 423, 134-143.	5.2	41
40	Increased permeability of blood vessels after reversible electroporation is facilitated by alterations in endothelial cell-to-cell junctions. Journal of Controlled Release, 2018, 276, 30-41.	9.9	41
41	Destabilization induced by electropermeabilization analyzed by atomic force microscopy. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 2223-2229.	2.6	40
42	Elucidation of in vitro cellular steps induced by antitumor treatment with plasma-activated medium. Scientific Reports, 2019, 9, 4866.	3.3	40
43	Nanosecond Electric Pulse Effects on Gene Expression. Journal of Membrane Biology, 2013, 246, 851-859.	2.1	39
44	Microwave Monitoring of Single Cell Monocytes Subjected to Electroporation. IEEE Transactions on Microwave Theory and Techniques, 2017, 65, 3512-3518.	4.6	39
45	Cell and Animal Imaging of Electrically Mediated Gene Transfer. DNA and Cell Biology, 2003, 22, 777-783.	1.9	38
46	Destabilizing Giant Vesicles with Electric Fields: An Overview of Current Applications. Journal of Membrane Biology, 2012, 245, 555-564.	2.1	37
47	Pulsed Electric Field Treatment Enhances the Cytotoxicity of Plasma-Activated Liquids in a Three-Dimensional Human Colorectal Cancer Cell Model. Scientific Reports, 2019, 9, 7583.	3.3	37
48	Mechanism by Which Electroporation Mediates DNA Migration and Entry into Cells and Targeted Tissues. Methods in Molecular Biology, 2008, 423, 19-33.	0.9	35
49	Effect of serum on in vitro electrically mediated gene delivery and expression in mammalian cells. Biochimica Et Biophysica Acta - Biomembranes, 2000, 1467, 362-368.	2.6	34
50	Cell Membrane Transport Mechanisms: Ion Channels and Electrical Properties of Cell Membranes. Advances in Anatomy, Embryology and Cell Biology, 2017, 227, 39-58.	1.6	34
51	Control by membrane order of voltage-induced permeabilization, loading and gene transfer in mammalian cells. Bioelectrochemistry, 2001, 53, 25-34.	4.6	32
52	Giant lipid vesicles under electric field pulses assessed by non invasive imaging. Bioelectrochemistry, 2012, 87, 253-259.	4.6	32
53	Insights into the mechanisms of electromediated gene delivery and application to the loading of giant vesicles with negatively charged macromolecules. Soft Matter, 2011, 7, 3872.	2.7	31
54	Membrane disorder and phospholipid scrambling in electropermeabilized and viable cells. Biochimica Et Biophysica Acta - Biomembranes, 2014, 1838, 1701-1709.	2.6	31

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55	Observations of the Mechanisms of Electromediated DNA Uptake - From Vesicles to Tissues. Current Gene Therapy, 2010, 10, 256-266.	2.0	29
56	Conjugates of Benzoxazole and GFP Chromophore with Aggregationâ€Induced Enhanced Emission: Influence of the Chain Length on the Formation of Particles and on the Dye Uptake by Living Cells. Small, 2016, 12, 6602-6612.	10.0	28
57	Calcium Delivery by Electroporation Induces In Vitro Cell Death through Mitochondrial Dysfunction without DNA Damages. Cancers, 2020, 12, 425.	3.7	28
58	Electric Field-Assisted Delivery of Photofrin to Human Breast Carcinoma Cells. Journal of Membrane Biology, 2013, 246, 725-735.	2.1	25
59	Magnetic Silica-Coated Iron Oxide Nanochains as Photothermal Agents, Disrupting the Extracellular Matrix, and Eradicating Cancer Cells. Cancers, 2019, 11, 2040.	3.7	25
60	Changes in nanomechanical properties and adhesion dynamics of algal cells during their growth. Bioelectrochemistry, 2019, 127, 154-162.	4.6	23
61	Efficient In Vitro Electropermeabilization of Reconstructed Human Dermal Tissue. Journal of Membrane Biology, 2015, 248, 903-908.	2.1	21
62	Versatile Cellular Uptake Mediated by Catanionic Vesicles: Simultaneous Spontaneous Membrane Fusion and Endocytosis. Molecular Pharmaceutics, 2015, 12, 103-110.	4.6	21
63	Effect of trans(NO, OH)-[RuFT(Cl)(OH)NO](PF6) ruthenium nitrosyl complex on methicillin-resistant Staphylococcus epidermidis. Scientific Reports, 2019, 9, 4867.	3.3	21
64	Pre-clinical investigation of the synergy effect of interleukin-12 gene-electro-transfer during partially irreversible electropermeabilization against melanoma. , 2019, 7, 161.		19
65	Electrochemotherapy: progress and prospects. Current Pharmaceutical Design, 2012, 18, 3406-15.	1.9	19
66	Electric Destabilization of Supramolecular Lipid Vesicles Subjected to Fast Electric Pulses. Langmuir, 2015, 31, 12215-12222.	3.5	18
67	New Insights in the Gene Electrotransfer Process: Evidence for the Involvement of the Plasmid DNA Topology. Current Gene Therapy, 2012, 12, 417-422.	2.0	17
68	Crosslinked polymeric self-assemblies as an efficient strategy for photodynamic therapy on a 3D cell culture. RSC Advances, 2016, 6, 69984-69998.	3.6	17
69	Importance of endogenous extracellular matrix in biomechanical properties of human skin model. Biofabrication, 2017, 9, 025017.	7.1	17
70	Safe and efficient novel approach for non-invasive gene electrotransfer to skin. Scientific Reports, 2018, 8, 16833.	3.3	17
71	3D Spheroidsâ€™ Sensitivity to Electric Field Pulses Depends on Their Size. Journal of Membrane Biology, 2013, 246, 745-750.	2.1	16
72	Self-assembled polymeric vectors mixtures: characterization of the polymorphism and existence of synergistic effects in photodynamic therapy. Nanotechnology, 2016, 27, 315102.	2.6	16

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73	Gene transfer by pulsed electric field is highly promising in cutaneous wound healing. Expert Opinion on Biological Therapy, 2016, 16, 67-77.	3.1	16
74	Direct Validation of Aptamers as Powerful Tools to Image Solid Tumor. Nucleic Acid Therapeutics, 2014, 24, 217-225.	3.6	15
75	Amphiphilic polymers based on polyoxazoline as relevant nanovectors for photodynamic therapy. Journal of Materials Chemistry B, 2019, 7, 4973-4982.	5.8	15
76	Progress and Prospects: The Use of 3D Spheroid Model as a Relevant Way to Study and Optimize DNA Electrotransfer. Current Gene Therapy, 2013, 13, 175-181.	2.0	15
77	A journey from the endothelium to the tumor tissue: distinct behavior between PEO-PCL micelles and polymersomes nanocarriers. Drug Delivery, 2018, 25, 1766-1778.	5.7	14
78	Flow Cytometry Quantification of Electropermeabilization. , 1998, 91, 141-148.		13
79	Cyanines in photodynamic reaction assisted by reversible electroporationâ€"in vitro study on human breast carcinoma cells. Photodiagnosis and Photodynamic Therapy, 2013, 10, 490-502.	2.6	13
80	In Vivo Evaluation of a New Recombinant Hyaluronidase to Improve Gene Electro-Transfer Protocols for DNA-Based Drug Delivery against Cancer. Cancers, 2018, 10, 405.	3.7	13
81	Nucleic Acids Electro-transfer: From Bench to Bedside. Current Drug Metabolism, 2013, 14, 300-308.	1.2	13
82	Shock waves associated with electric pulses affect cell electro-permeabilization. Bioelectrochemistry, 2014, 100, 36-43.	4.6	12
83	Increasing Uptake of Silica Nanoparticles with Electroporation: From Cellular Characterization to Potential Applications. Materials, 2019, 12, 179.	2.9	12
84	Gene Electrotransfer in 3D Reconstructed Human Dermal Tissue. Current Gene Therapy, 2016, 16, 75-82.	2.0	11
85	Microwave dielectric spectroscopy for single cell irreversible electroporation monitoring. , 2016, , .		10
86	Parameters Affecting Cell Viability Following Electroporation In Vitro. , 2017, , 1449-1465.		10
87	Interaction between GUVs and catanionic nanocontainers: new insight into spontaneous membrane fusion. Chemical Communications, 2012, 48, 6648.	4.1	9
88	Drug Release by Direct Jump from Poly(ethylene-glycol-b-Îµ-caprolactone) Nano-Vector to Cell Membrane. Molecules, 2016, 21, 1643.	3.8	9
89	A nanosecond pulsed electric field (nsPEF) can affect membrane permeabilization and cellular viability in a 3D spheroids tumor model. Bioelectrochemistry, 2021, 141, 107839.	4.6	9
90	Transgene expression of transfected supercoiled plasmid DNA concatemers in mammalian cells. Journal of Gene Medicine, 2009, 11, 1071-1073.	2.8	8

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91	Gene electrotransfer: from biophysical mechanisms to in vivo applications. Biophysical Reviews, 2009, 1, 177-184.	3.2	8
92	Editorial [Hot topic: Gene Transfer by Electric Fields (Guest Editor: Marie-Pierre Rols)]. Current Gene Therapy, 2010, 10, 255-255.	2.0	8
93	Transdermal Delivery of Macromolecules Using Two-in-One Nanocomposite Device for Skin Electroporation. Pharmaceutics, 2021, 13, 1805.	4.5	8
94	How transient alterations of organelles in mammalian cells submitted to electric field may explain some aspects of gene electrotransfer process. Bioelectrochemistry, 2016, 112, 166-172.	4.6	7
95	Development of a near infrared protein nanoprobe targeting Thomsen-Friedenreich antigen for intraoperative detection of submillimeter nodules in an ovarian peritoneal carcinomatosis mouse model. Biomaterials, 2020, 241, 119908.	11.4	7
96	Electroporation does not affect human dermal fibroblast proliferation and migration properties directly but indirectly via the secretome. Bioelectrochemistry, 2020, 134, 107531.	4.6	7
97	Visualization of Nonspecific Antitumor Effectiveness and Vascular Effects of Gene Electro-Transfer to Tumors. Current Gene Therapy, 2016, 16, 90-97.	2.0	7
98	Electrical discharges in water induce sporesâ€™ DNA damage. PLoS ONE, 2018, 13, e0201448.	2.5	6
99	A protein nanocontainer targeting epithelial cancers: rational engineering, biochemical characterization, drug loading and cell delivery. Nanoscale, 2019, 11, 3248-3260.	5.6	6
100	In Vitro Delivery of Drugs and Other Molecules to Cells. , 2000, 37, 83-97.		5
101	Inactivation of spores by electric arcs. BMC Microbiology, 2016, 16, 148.	3.3	5
102	Evaluations of Acute and Sub-Acute Biological Effects of Narrowband and Moderate-Band High Power Electromagnetic Waves on Cellular Spheroids. Scientific Reports, 2019, 9, 15324.	3.3	5
103	Generator and Setup for Emulating Exposures of Biological Samples to Lightning Strokes. IEEE Transactions on Biomedical Engineering, 2015, 62, 2535-2543.	4.2	4
104	Noninvasive Gene Electrotransfer in Skin. Human Gene Therapy Methods, 2019, 30, 17-22.	2.1	4
105	Electric Field Based Therapies in Cancer Treatment. Cancers, 2020, 12, 3420.	3.7	4
106	Sub-cellular temporal and spatial distribution of electrotransferred LNA/DNA oligomer. Journal of Rnai and Gene Silencing, 2013, 9, 479-85.	1.2	4
107	Investigating relationship between transfection and permeabilization by the electric field and/or the PluronicÂ® L64 in vitro and in vivo. Journal of Gene Medicine, 2012, 14, 204-215.	2.8	3
108	Gene Delivery by Electroporation In Vitro: Mechanisms. , 2016, , 1-16.		3

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109	Biological Responses. , 2017, , 155-274.		3
110	High power electromagnetic pulse applicators for evaluation of biological effects induced by electromagnetic radiation waves. RSC Advances, 2018, 8, 16319-16329.	3.6	3
111	Cyclin B1 knockdown mediated by clinically approved pulsed electric fields siRNA delivery induces tumor regression in murine melanoma. International Journal of Pharmaceutics, 2020, 573, 118732.	5.2	3
112	Gene electrotransfer: from biophysical mechanisms to in vivo applications. Biophysical Reviews, 2009, 1, 185-191.	3.2	2
113	Medical Applications. , 2017, , 275-388.		2
114	Anin vitrostudy of the cytotoxicity of TTFÂ·TCNQ nanoparticles to mammalian cells. Materials Advances, 2020, 1, 1963-1970.	5.4	2
115	High Power Electromagnetic Waves Exposure of Healthy and Tumor Bearing Mice: Assessment of Effects on Mice Growth, Behavior, Tumor Growth, and Vessel Permeabilization. International Journal of Molecular Sciences, 2021, 22, 8516.	4.1	2
116	Transfer of small interfering RNA by electropermeabilization in tumor spheroids. Bioelectrochemistry, 2021, 141, 107848.	4.6	2
117	Parameters Affecting Cell Viability Following Electroporation In Vitro. , 2016, , 1-17.		2
118	Fluorescence Imaging in Cancerology. Current Molecular Imaging, 2013, 2, 3-17.	0.7	1
119	Plane wave in vitro exposure of biological samples, geometries considerations. , 2014, , .		1
120	Gene Delivery by Electroporation In Vitro: Mechanisms. , 2017, , 387-401.		1
121	Evaluation of a Microwave Biosensor for On-Chip Electroporation and Efficient Molecular Delivery Into Mammalian Cells. IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, 2019, 3, 224-231.	3.4	1
122	Electrotransfer of Plasmid DNA. , 2011, , 145-157.		1
123	How Imaging Membrane and Cell Processes Involved in Electropermeabilization Can Improve Its Development in Cell Biology and in Clinics. Advances in Anatomy, Embryology and Cell Biology, 2017, 227, 107-118.	1.6	1
124	Effect of Electric Field Intensity on Plasmid DNA/Membrane Interaction during In-Vitro Gene Electrotransfer. Drug Delivery Letters, 2012, 2, 22-25.	0.5	0
125	Nucleic Acid Electrotransfer in Mammalian Cells: Mechanistic Description. , 2016, , 1-14.		0
126	Molecular Transmembrane Transport with Giant Unilamellar Vesicles (GUVs). , 2017, , 95-111.		0

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127	Editorial for the Special Issue of Bioelectrochemistry. Bioelectrochemistry, 2020, 135, 107555.	4.6	0
128	Effect of Electric Field Intensity on Plasmid DNA/Membrane Interaction during In-Vitro Gene Electrotransfer. Drug Delivery Letters, 2012, 2, 22-25.	0.5	0
129	Molecular Transmembrane Transport with Giant Unilamellar Vesicles (GUVs). , 2016, , 1-17.		0
130	Evaluation of Cell Membrane Effects After 3D Multicellular Spheroids RF Exposure. , 2020, , .		0
131	Electrochemotherapy: Progress and Prospects. Current Pharmaceutical Design, 2012, , .	1.9	0