

Materials List for:

Synthesis, Functionalization, and Characterization of Fusogenic Porous Silicon Nanoparticles for Oligonucleotide Delivery

Byungji Kim¹, Michael J. Sailor^{1,2}

¹Materials Science and Engineering Program, University of California, San Diego

²Department of Chemistry and Biochemistry, University of California, San Diego

Correspondence to: Byungji Kim at byk022@eng.ucsd.edu

URL: <https://www.jove.com/video/59440>

DOI: [doi:10.3791/59440](https://doi.org/10.3791/59440)

Materials

Name	Company	Catalog Number	Comments
1,2-dimyristoyl-sn-glycero-3-phosphocholine (DMPC)	Avanti Polar Lipids	850345P	Powder
1,2-dioleoyl-3-trimethylammonium-propane (chloride salt) (DOTAP)	Avanti Polar Lipids	890890P	Powder
1,2-distearoyl-sn-glycero-3-phosphoethanolamine-N-[maleimide(polyethylene glycol)-2000] (ammonium salt) (DSPE-PEG(2000) Maleimide)	Avanti Polar Lipids	880126P	Powder
Aluminum foil	VWR International, LLC	12175-001	
Calcium chloride (CaCl ₂)	Spectrum	C1977	Anhydrous, Pellets
Chloroform	Fisher Scientific	C6061	
Computer	Dell	Dimension 9200	Any computer with PCI card slot is acceptable
Dil Stain (1,1'-Diocetadecyl-3,3',3'-Tetramethylindocarbocyanine Perchlorate ('Dil'; DiIc18(3)))	Life Technologies	D3911	
Ethanol (EtOH)	UCSD Store	111	200 Proof
Hydrofluoric acid (HF)	VWR International, LLC	MK264008	Purity: 48%
Keithley 2651a Sourcemeter	Keithley	2651A	
LabVIEW	National Instruments		Sample program available at: http://sailorgroup.ucsd.edu/software/
LysoTracker Green DND-26	Thermo Fisher Scientific	L7526	
Liposome extrusion set with heating block	Avanti Polar Lipids	610000	
Microcon-30kDa Centrifugal Filter Unit	EMD Millipore	MRCF0R030	
O-ring	ChemGlass	CG-305-220	
Phosphate-buffered saline (PBS)	Thermo Fisher Scientific	10010-049	
Platinum coil	VWR International, LLC	AA10285-BU	
Potassium hydroxide (KOH)	Fisher Scientific	P250-3	
Silicon wafer	Siltronix	Custom order	
siRNA	Dharmacon	Custom order	IRF5, sense 5'-dTdT-CUG CAG AGA AUA ACC CUG A-dTdT-3' and antisense 5'-dTdT UCA GGG UUA UUC UCU GCA G dTdT-3'
Sonicator	VWR International, LLC	97043-960	

Targeting peptide (CRV)	CPC Scientific	Custom order	sequence CRVLRSGSC; made cyclic by a disulfide bond between the side chains of the two cysteine residues
Teflon etch cell	Interface Performance Materials, Inc.	Custom order	
UltraPure DNase/RNase-Free Distilled Water	Thermo Fisher Scientific	10977015	