

Testing the *In Vitro* and *In Vivo* Efficiency of mRNA-Lipid Nanoparticles Formulated by Microfluidic Mixing

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jove.com/video/64810

Materials

Name	Company	Catalog Number	Comments
0.1 M Hydrochloric Acid	Sigma	7647-01-0	
0.22 µm Syringe Filters	Genesee	25-243	
1 mL BD Slip Tip Syringe	BD	309659	
1,2-dimyristoyl-sn-glycero-3-phosphoethanolamine-N-[methoxy(polyethylene glycol)-2000] (ammonium salt) (C14-PEG2000)	Avanti Polar Lipids	880150P	
1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (DOPE)	Avanti Polar Lipids	850725P	
1.5 mL Eppendorf Tubes	Fisher Scientific	05-408-129	
15 mL Conical Tubes	Fisher Scientific	14-959-70C	
200 proof Ethanol	Decon Labs	2716	
23G Needles	Fisher Scientific	14-826-6C	
3 mL BD Disposable Syringes with Luer-Lok tips	Fisher Scientific	14-823-435	
3 mL Dialysis Cassettes	Thermo Scientific	A52976	
96 Well Black Wall Black Bottom Plate	Fisher Scientific	07-000-135	
96 Well White/Clear Bottom Plate, TC Surface	Thermo Scientific	165306	
Ammonium Acetate, 1 Kilogram	Research Products International	631-61-8	
Ammonium Citrate dibasic	Sigma	3012-65-5	
BD Luer-Lok Syringe sterile, single use, 5 mL	BD	309646	
C12-200 Ionizable Lipid	Cayman Chemical	36699	
C57BL/6 Mice	Jackson Laboratory	000664	
Cholesterol	Sigma	57-88-5	
CleanCap FLuc mRNA (5moU)	TriLink Biotechnologies	L-7202	
Disposable cuvettes	Fisher Scientific	14955129	
D-Luciferin, Potassium Salt	Thermo Scientific	L2916	

DMEM, high glucose	ThermoFisher Scientific	11965-084	
Exel Insulin Syringes - 0.5 mL	Fisher Scientific	1484132	
Fetal Bovine Serum	Corning	35-010-CV	
Hep G2 [HEPG2]	ATCC	HB-8065	
HyPure Molecular Biology Grade Water	Cytiva	SH30538.03	
Infinite 200 PRO Plate Reader	Tecan	N/A	
IVIS Spectrum In Vivo Imaging System	Perkin Elmer	N/A	
Large Kimwipes	Fisher Scientific	06-666-11D	
Luciferase Assay Kit	Promega	E4550	
NanoAssemblr Ignite Cartridges - Classic - 100 Pack	Precision Nanosystems	NIN0065	
NanoAssemblr Ignite Instrument	Precision Nanosystems	NIN0001	
PBS - Phosphate-Buffered Saline (10x) pH 7.4, RNase-free	Thermo Scientific	AM9624	
Penicillin-Streptomycin	ThermoFisher Scientific	15140122	
QB Citrate Buffer, (Citrate 100 mM) pH 3.0	Teknova	Q2442	
Quant-it RiboGreen RNA Assay Kit	Thermo Scientific	R11490	
Reporter Lysis 5x Buffer	Promega	E3971	
RNase Away Surface Decontaminant	ThermoFisher Scientific	7000TS1	
Sodium Chloride	Sigma	7647-14-5	
Sodium Hydroxide	Sigma	1310-73-2	
Sodium Phosphate	Sigma	7601-54-9	
TNS reagent (6-(p-Toluidino)-2-naphthalenesulfonic acid sodium salt)	Sigma	T9792	
Triton X-100	Sigma	9036-19-5	
Zetasizer	Malvern Panalytical	NanoZS	