

Materials List for

Formulating and Characterizing Lipid Nanoparticles for Gene Delivery using a Microfluidic Mixing Platform

Christina M. Bailey-Hytholt^{*1}, Paroma Ghosh^{*1}, Julia Dugas¹, Isidro E. Zarraga¹, Amey Bandekar¹

¹Biologics Drug Product Development & Manufacturing, Sanofi, Framingham, Massachusetts

*These authors contributed equally

Corresponding Authors

Christina M. Bailey-Hytholt

Christina.Bailey-Hytholt@sanofi.com

Amey Bandekar

amey.bandekar@sanofi.com

Citation

Bailey-Hytholt, C.M., Ghosh, P., Dugas, J., Zarraga, I.E., Bandekar, A. Formulating and Characterizing Lipid Nanoparticles for Gene Delivery using a Microfluidic Mixing Platform. *J. Vis. Exp.* (), e62226, doi:10.3791/62226 (2021).

Date Published

February 25, 2021

DOI

10.3791/62226

URL

jove.com/video/62226

Materials

Name	Company	Catalog Number	Comments
1,2-dimyristoyl-rac-glycero-3-methoxypolyethylene glycol-2000 (C-14 PEG)	Avanti Polar Lipids	880151P	
10 µl Graduated Filter Tips (RNase-, DNase-, DNA-free)	USA Scientific	1121-3810	
1000 µl Graduated Filter Tips (RNase-, DNase-, DNA-free)	USA Scientific	1111-2831	
20 µl Beveled Filter Tips (RNase-, DNase-, DNA-free)	USA Scientific	1120-1810	
200 µl Graduated Filter Tips (RNase-, DNase-, DNA-free)	USA Scientific	1120-8810	
3β-Hydroxy-5-cholestene, 5-Cholesten-3β-ol (Cholesterol)	Sigma-Aldrich	C8667	
BD Slip Tip Sterile Syringes (1 ml syringe)	Thermo Fisher Scientific	14-823-434	
BD Slip Tip Sterile Syringes (3 ml syringe)	Thermo Fisher Scientific	14-823-436	
BD Vacutainer General Use Syringe Needles (BD Blunt Fill Needle 18G)	Thermo Fisher Scientific	23-021-020	
Bechtop Centrifuge	Beckman coulter		
Black 96 well plates	Thermo Fisher Scientific	14-245-177	
BrandTech BRAND BIO-CERT RNase-, DNase-, DNA-free microcentrifuge tubes (1.5mL)	Thermo Fisher Scientific	14-380-813	
Citric Acid	Fisher Scientific	02-002-611	
Corning 500ml Vacuum Filter/ Storage Bottle System, 0.22 µm pore	Corning	430769	
Disposable folded capillary cells	Malvern	DTS1070	
Ethyl Alcohol, Pure 200 proof	Sigma-Aldrich	459844	
Fisher Brand Semi-Micro Cuvette	Thermo Fisher Scientific	14955127	

Invitrogen Conical Tubes (15 mL) (DNase-RNase-free)	Thermo Fisher Scientific	AM12500	
MilliporeSigma Amicon Ultra Centrifugal Filter Units	Thermo Fisher Scientific	UFC901024	
NanoAssemblr Benchtop	Precision Nanyosystems		
Nuclease-free water	Thermo Fisher Scientific	AM9930	
Phosphate Buffered Saline (PBS)	Thermo Fisher Scientific	AM9624	
Quant-iT PicoGreen dsDNA Assay Kit	Thermo Fisher Scientific	P7589	
Quant-iT RiboGreen RNA Assay Kit	Thermo Fisher Scientific	R11490	
Sodium Chloride	Fisher Scientific	02-004-036	
Sodium Citrate, Dihydrate, granular	Fisher Scientific	02-004-056	
SpectraMax i3x	Molecular Devices		
Zetasizer Nano	Malvern		