

Materials List for:

Synthesis of Core-shell Lanthanide-doped Upconversion Nanocrystals for Cellular Applications

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Materials

Name	Company	Catalog Number	Comments
1-Octadecene	Sigma Aldrich	O806	Technical grade
oleic acid	Sigma Aldrich	364525	Technical grade
Methanol	Fisher Scientific	A412	Technical grade
Ethanol	Fisher Scientific	A405	Technical grade
Acetone	Fisher Scientific	A18	Technical grade
Hexane	Sigma Aldrich	H292	Technical grade
Thulium (III) acetate hydrate (Tm(CH ₃ CO ₂) ₃)	Sigma Aldrich	367702	99.9% trace metals basis
Neodymium (III) acetate hydrate (Nd(CH ₃ CO ₂) ₃)	Sigma Aldrich	325805	99.9% trace metals basis
Ytterbium (III) acetate hydrate (Yb(CH ₃ CO ₂) ₃)	Sigma Aldrich	326011	99.9% trace metals basis
Yttrium(III) acetate hydrate (Y(CH ₃ CO ₂) ₃)	Sigma Aldrich	326046	99.9% trace metals basis
Sodium hydroxide (NaOH)	Sigma Aldrich	S5881	reagent grade
Ammonium fluoride (NH ₄ F)	Sigma Aldrich	338869	ACS reagent
Hydrogen chloride (HCl)	Fisher Scientific	A144	reagent grade
polyacrylic acid (PAA)	Sigma Aldrich	323667	average Mw 1800
1-Hydroxybenzotriazole hydrate (HOBT)	Sigma Aldrich	54802	ACS reagent
1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDC)	Sigma Aldrich	E7750	commercial grade
Dibenzocyclooctyne-amine (DBCO-NH ₂)	Sigma Aldrich	761540	ACS reagent
N,N-Diisopropylethylamine (DIPEA)	Sigma Aldrich	D125806	ACS reagent
Dimethyl sulfoxide (DMSO)	Fisher Scientific	BP231	Technical grade
HEK293 cell line	ATCC	CRL-1573	human embryonic kidney
Fetal Bovine Serum (FBS)	Sigma Aldrich	F1051	ACS reagent
Penicillin-Streptomycin	Thermo Fisher	15140122	10,000 U/mL
plasmid (pCAGGS-Chr2-Venus)	Addgene	15753	Plasmid sent as bacteria in agar stab
Dulbecco's Modified Eagle Medium (DMEM)	Thermo Fisher	11965092	High glucose
opti-Modified Eagle Medium (MEM)	Thermo Fisher	51985034	Reduced Serum Media

Lipofectamine 3000 Transfection Reagent	Thermo Fisher	L3000015	Lipid-Based Transfection
N-Azidoacetylmannosamine, Acetylated (Ac ₄ ManNAz)	Sigma Aldrich	A7605	ACS reagent
Trypsin-EDTA (0.25%)	Thermo Fisher	25200056	Phenol red
Rhod-3 AM Calcium Imaging Kit	Thermo Fisher	R10145	Fluorescence dye
5-carboxytetramethylrhodamine-azide (Rhod-N ₃)	Sigma Aldrich	760757	Azide-fluor 545
Confocal dish	ibidi GmbH	81158	Glass Bottom, 35 mm
50 ml conical centrifuge tubes	Greiner Bio-One	227261	Polypropylene
15 ml conical centrifuge tubes	Greiner Bio-One	188271	Polypropylene
1.5 ml conical microcentrifuge tubes	Greiner Bio-One	616201	Polypropylene
Phenylmethyl silicone oil	Clearco Products	63148-52-7	Less than 320 degrees Celsius
Glass thermometer	GH Zeal	L0111/10	From -10 to 360 degrees Celsius
12-well plate	Sigma Aldrich	Z707775	Polystyrene