

Materials List for

# Cell-free Protein Synthesis System for Building Synthetic Cells

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jove.com/video/66626

## Materials

Name	Company	Catalog Number	Comments
1,2-dioleoyl- <i>sn</i> -glycero-3-phosphocholine(DOPC)	Avanti	850375P	
1,2-dioleoyl- <i>sn</i> -glycero-3-phospho-L-serine (sodium salt)(DOPS)	Avanti	840035P	
1,4 dithiothreitol (DTT)	Sigma-Aldrich	1.11474	
1-palmitoyl-2-oleoyl- <i>sn</i> -glycero-3-phosphocholine (POPC)	Avanti	850457P	
3,5-cyclic AMP (cAMP)	Sigma-Aldrich	A9501	
50 mL tubes	Eppendorf	Eppendorf Tubes BioBased	
50% hydrogen peroxide	Sigma-Aldrich	516813	
Acetate	Sigma-Aldrich	A6283	
Agar powder	Sigma-Aldrich	05040	
Alanin	Sigma-Aldrich	A4349	
Amicon Stirred Cells	MerckMillipore	UFSC05001	
Ammonium acetate (NH <sub>4</sub> OAc)	Sigma-Aldrich	A7262	
Arginin	Sigma-Aldrich	A4474	
Asparagin	Sigma-Aldrich	A0884	
Aspartat	Sigma-Aldrich	A5474	
ATP	Roche	11140965001	
Atto 488 DOPE	Sigma-Aldrich	67335	
Atto 647N DOPE	Sigma-Aldrich	42247	
Baffled Erlenmeyer flask	Shuniu	250 mL, 1000mL	
Bovine Serum Albumin(BSA)	Roche	10711454001	
Centrifuge tube	Eppendorf	Eppendorf Tubes 3810X	
Centrifuge tube rack	Eppendorf	0030119819	
Chemiluminescence and epifluorescence imaging system	Uvitec	Alliance Q9 Advanced	
Chloroform	Sigma-Aldrich	288306	

Confocal Laser Scanning Microscopy (LSM)	ZEISS	LSM 780	
Countess Cell Counting Chamber Slides	Thermo Fisher Scientific	C10283	
Coverslip	Thermo Scientific	Menzel BB02400500A113MNZ0	
creatine kinase (CK)	Roche	10127566001	
Creatine phosphate (CP)	Sigma-Aldrich	10621714001	
Culture dish	Huanqiu	90 mm	
Cystein	Sigma-Aldrich	C5360	
Cytidine 5'-triphosphate disodium salt (CTP)	aladdin	C101487	
Dialysis membrane	Spectrum	Standard RC Tubing MWCO: 12-14 kD	
E.Z.N.A. Cycle Pure Kit	Omega Bio-Tek	D6492-01	
Electro-Heating Standing-Temperature Cultivator	Yiheng instrument	DHP-9602	
Ethylenediaminetetraacetic acid(EDTA)	Biosharp	1100027	
Fluorescent plate reader	BioTek	Synergy 2	
Fluorinated oil	Suzhou CChip scientific instrument	2%HFE7500	
Folinic acid	Sigma-Aldrich	47612	
French Press	G.Heinemann	HTU-DIGI-Press	
Glucose	Sigma-Aldrich	G7021	
Glutamat	Sigma-Aldrich	G5667	
Glutamin	Sigma-Aldrich	G5792	
Glycerol	Sigma-Aldrich	G5516	
Glycin	Sigma-Aldrich	G7126	
Guanosine 5'-triphosphate sodium salt hydrate(GTP)	Roche	10106399001	
HEPES	Sigma-Aldrich	H3375	
HiPrep Q FF 16/10	Cytiva	28936543	
Histidin	Sigma-Aldrich	H6034	
Isoleucin	Sigma-Aldrich	I5281	
Isopropyl- $\beta$ -D-thiogalactopyranoside (IPTG)	Sigma-Aldrich	I5502	
K <sub>2</sub> HPO <sub>4</sub>	Sigma-Aldrich	P8281	
KH <sub>2</sub> PO <sub>4</sub>	Sigma-Aldrich	P5655	
Leucin	Sigma-Aldrich	L6914	
Lysin	Sigma-Aldrich	L5501	
Magnesium acetate tetrahydrate (Mg(OAc) <sub>2</sub> )	Sigma-Aldrich	M5661	
Magnesium chloride(MgCl <sub>2</sub> )	Sigma-Aldrich	M2670	
Methionin	Sigma-Aldrich	M8439	
Microcentrifuge	Eppendorf	5424 R	
Mineral oil	Sigma-Aldrich	M5904	
Mini-PROTEAN Tetra Cell Systems	Bio-Rad	1645050	
Multipurpose Centrifuge	Eppendorf	5810 R	
NaN <sub>3</sub>	Sigma-Aldrich	S2002	
Nucleic Acid & Protein UV-Assay Measurements	IMPLEN	NanoPhotometer N60	

NucleoBond Xtra Maxi kit for transfection-grade plasmid DNA	MACHEREY-NAGEL	740414.5	
Nunc-Immuno MicroWell 96 well polystyrene plates	Sigma-Aldrich	P8616	
PCR Thermal Cycler	Eppendorf	Mastercycler nexus	
Peptone	Sigma-Aldrich	83059	
Phenylalanin	Sigma-Aldrich	P8740	
Phosphoenolpyruvat (PEP)	GLPBIO	GC44635	
PMSF	Sigma-Aldrich	PMSF-RO	
Polyethylene glycol 8000 (PEG 8000)	Sigma-Aldrich	89510	
Potassium Acetate(KOAc)	Sigma-Aldrich	P5708	
Potassium chloride(KCl)	Sigma-Aldrich	P9541	
Potassium glutamate (K-glutamate)	Sigma-Aldrich	G1501	
Potassium hydroxide(KOH)	Sigma-Aldrich	221473	
Prolin	Sigma-Aldrich	P8865	
Pyruvate kinase (PK)	Sigma-Aldrich	P9136	
Serin	Sigma-Aldrich	S4311	
Shaker	Zhichushakers	ZQZY-AF8	
Sodium chloride(NaCl)	Sigma-Aldrich	S5886	
Sodium hydroxide(NaOH)	Sigma-Aldrich	S5881	
Sucrose	aladdin	S112226	
Sulfuric acid	Sigma-Aldrich	339741	
Syringe Filters	Jinteng	0.45 µm	
Test tube	Shuniu	20 mL	
TGX FastCast Acrylamide Kit, 12%	Bio-Rad	#1610175	
ThermoMixer	Eppendorf	ThermoMixer C	
Threonin	Sigma-Aldrich	T8441	
Tris base	Sigma-Aldrich	V900483	
tRNA	Roche	10109550001	
Tryptone	Sigma-Aldrich	T7293	
Tryptophan	Sigma-Aldrich	T8941	
Tyrosin	Sigma-Aldrich	T8566	
UTP Trisodium salt (UTP)	aladdin	U100365	
Vacuum Pump with Circulated Water System	Zhengzhou Greatwall Scientific Industrial and Trade Co.Ltd	SHB-III	
Valin	Sigma-Aldrich	V4638	
Vortex Mixers	Kylin-Bell	Vortex QL-861	
Water purification system	MerckMillipore	Direct ultrapure water (Type 1)	
Yeast extract	Sigma-Aldrich	70161	
β-mercaptoethanol	Sigma-Aldrich	444203	