

Materials List for:

Using Tomoauto: A Protocol for High-throughput Automated Cryo-electron Tomography

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Materials

Name	Company	Catalog Number	Comments
Glycerol	Sigma-Aldrich	G9012	
Tryptic Soy Broth	Sigma-Aldrich	22092	
Spectinomycin	Sigma-Aldrich	S0692	
Electroporation Apparatus	Bio-rad	165-2100	
1 mm Cuvette	BTX	45-0124	
1.5 ml Cryogenic Tube	Thermoscientific	5000-1020	
1.5 ml Microcentrifuge Tube	Sigma-Aldrich	Z336769	
Holey Carbon Grids	Quantifoil (Electron Microscopy Sciences)	Q2100CR2	R2/2 200 Cu
Glow Discharge Device	In-House		Commercial Alternative Available
Vacuum Desiccator	Sigma-Aldrich	Z119016	Used in In-House Glow Discharge Device
High-Frequency Generator	Electro-Technic Products	BD-10A	Used in In-House Glow Discharge Device. CAUTION: This device generates high voltages.
Centrifuge			
Forceps	Dumont (Electron Microscopy Sciences)	72705-D	Style 5 Anti-magnetic
Colloidal Gold	Aurion		BSA 10nm
Filter Paper	Whatman		#2
Ethane	Matheson Tri-Gas	UN1035	
Nitrogen	Matheson Tri-Gas	UN1977	
Plunger Device	In-House		Commercial Alternative Available
Cryogenic Grid Storage Box	Electron Microscopy Sciences	71166-30	
Transmission Electron Microscope	FEI		Tecnai Polara F30 (300 KeV)
Direct Detection Device Camera	Gatan		K2 Summit
Tomogram Acquisition Software	SerialEM		http://bio3d.colorado.edu/SerialEM Alternatives: UCSF Tomography, Legikon, FEI Batch Tomography
Beam-induced Motion Correction Software	MOTIONCORR		http://cryoem.ucsf.edu/software/driftcorr.html Requires>2GB Nvidia GPU
Tilt-Series Alignment Software	IMOD		http://bio3d.colorado.edu/IMOD Alternatives: XMIPP, Protomo
Automatic Fiducial Marker Modelling Software	IMOD		Alternatives: RAPTOR (Included in IMOD0 (Usable in tomoauto)

CTF Determination Software	IMOD		Alternatives: CTFFIND http://grigoriefflab.janelia.org/ctf (Usable in tomoauto)
Tilt-Series Reconstruction Software	tomo3d		https://sites.google.com/site/3demimageprocessing/tomo3d Alternatives: IMOD, XMIPP http://xmipp.cnb.csic.es , Protomo
Tilt-Series Automated Processing Software	tomoauto		https://github.com/DustinMorado/tomoauto
Particle Picking Software	i3		http://www.electronmicroscopy.org Alternatives: IMOD
Subvolume Averaging Software	i3		Alternatives: PEET http://bio3d.colorado.edu/PEET , Dynamo https://dynamo.bioz.unibas.ch , PyTom http://pytom.org