

Materials List for:

Particles without a Box: Brush-first Synthesis of Photodegradable PEG Star Polymers under Ambient Conditions

Jenny Liu¹, Angela Xiaodi Gao¹, Jeremiah A. Johnson¹

¹Department of Chemistry, Massachusetts Institute of Technology

Correspondence to: Jeremiah A. Johnson at jaj2109@mit.edu

URL: <https://www.jove.com/video/50874>

DOI: [doi:10.3791/50874](https://doi.org/10.3791/50874)

Materials

Name	Company	Catalog Number	Comments
Grubbs Second Generation Catalyst	Materia (or Sigma Aldrich)	C848 (Sigma Aldrich: 569747)	Used as purchased from manufacturer. *Provided as a generous gift.
Pyridine	Sigma Aldrich	270970	Used as purchased from manufacturer
O-(2-aminoethyl)polyethylene glycol 3000	Sigma Aldrich	07969	Used as purchased from manufacturer
PEG-MM	N/A	N/A	Synthesized following reported procedures (Ref. 21, protocol 1)
norbornene-N-hydroxysuccinimide (NHS) ester	N/A	N/A	Synthesized following reported procedures (Ref. 21)
Bis-norb-BOC Crosslinker	N/A	N/A	Synthesized following reported procedures (Ref. 21)
Pentane	Sigma Aldrich	158941	Used as purchased from manufacturer
Tetrahydrofuran (HPLC grade)	Sigma Aldrich	34865	Dried and purified over a solvent purification columns
Dichloromethane	VWR	BDH1113-4LG	Used as purchased from manufacturer
Acetonitrile (HPLC grade)	Sigma Aldrich	34998	Used as purchased from manufacturer
Acetic Acid	Sigma Aldrich	A6283	Used as purchased from manufacturer
Sodium sulfate	Sigma Aldrich	239313	Used as purchased from manufacturer
Diethyl ether	Sigma Aldrich	673811	Used as purchased from manufacturer
Dimethylformamide (HPLC grade)	Sigma Aldrich	270547	Used as purchased from manufacturer
Lithium Bromide	Sigma Aldrich	213225	Used as purchased from manufacturer
MillQ Biocel A10	Millipore		
Beckmann Coulter HPLC (127p solvent module, 166p detector)	Beckmann Coulter		
Zorbax 300SB-C18 PrepHT reverse phase column	Agilent		
1260 Infinity Liquid Chromatography	Agilent		
GPC KD-806M column	Shodex		
Dawn Heleos II Light Scatterer	Wyatt		

Optilab T-rEX Refractive Index Detector	Wyatt		
Glass Scintillation Vials - 40 ml	Chemglass	CG-4909-05	
Glass Scintillation Vials - 4 ml	Chemglass	CG-4904-06	
Glass Scintillation Vials (PTFE-lined cap) - 2 ml	Agilent	5183-4518	
Stir-bars	VWR	5894x	various sizes
13 mm 0.45 μ m Nylon Syringe filter	PerkinElmer	02542903	
13 mm 0.45 μ m polytetrafluoroethylene syringe filter	PerkinElmer	02542909	
1 ml disposable syringes	VWR	53548-001	
Swing bucket centrifuge or similar			Should be able to reach approximately 4,000 rpm
Round bottom flask			
Fritted glass filter assembly			
Rotary Evaporator			
Balance			