

Materials List for:

Atomic Force Microscopy Imaging and Force Spectroscopy of Supported Lipid Bilayers

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Materials

Name	Company	Catalog Number	Comments
1,2-dioleoyl- <i>sn</i> -glycero-3-phosphocholine	Avanti Polar Lipids, Inc.	850375P	Comes as lyophilized powder in sealed vials. Dissolve all powder in chloroform upon opening. Store extra as dried lipid films, under inert atmosphere, at -20 °C. Visit here for more information on storage and handling.
Sphingomyelin (Brain, Porcine)	Avanti Polar Lipids, Inc.	860062P	Comes as lyophilized powder in large sealed plastic containers. Dissolve a spatula point of powder powder in chloroform upon opening. Store extra as dried lipid films, under inert atmosphere, at -20 °C. Visit here for more information on storage and handling.
Cholesterol	Avanti Polar Lipids, Inc.	700000P	Comes as lyophilized powder in large sealed plastic containers. Dissolve a spatula point of powder powder in chloroform upon opening. Store extra as dried lipid films, under inert atmosphere, at -20 °C. Visit here for more information on storage and handling.
Sodium chloride (NaCl), 99.8%	Carl Roth GmbH + Co. KG	9265.1	
Potassium chloride (KCl), 88%	Sigma	P9541	
Sodium hydrogenphosphate (Na ₂ HPO ₄), >99%	AppliChem GmbH	A1046	
Potassium dihydrogenphosphate (KH ₂ PO ₄), 99%	Carl Roth GmbH + Co. KG	3904.1	
Calcium chloride dihydrate (CaCl ₂), molecular biology grade	AppliChem GmbH	A4689	
HEPES, molecular biology grade	AppliChem GmbH	A3724	
Glass coverslip, 24 x 60 mm, 1 mm thickness	Duran Group	2355036	
Punch and Die Set	Precision Brand Products, Inc	40105	
Optical Adhesive	Norland Products, Inc.	NOA 88	Liquid adhesive that hardens when cured under long wavelength UV light.
Name	Company	Catalog Number	Comments

Mica blocks	NSC Mica Exports Ltd.		These are mica pieces at least 1 sq. inches in area and thickness ranging from 0.006 inches to 0.016 inches. They are cut to a specific size by the company for shipping. Small mica discs can be punched from the mica blocks using the punch and die set. Always handle mica with gloves or tweezers.
Laboratory Equipment Grease	Borer Chemie AG	Glisseal N	
Liposome Extruder	Avestin	LiposoFast-Basic	As an alternative one can also look at offers from Northern Lipids, Inc.
Adhesive Tape	3M	Scotch(R) Magic (TM) Tape 810 (1-inch)	
Bath Sonicator	Bandelin Sonorex Digitec	DT-31	No heating, Frequency: 35 kHz, Ultrasonic Peak Output: 160 W, HF Power: 40 W. (Data sheet)
Silicon Nitride AFM Cantilever	Bruker AFM Probes	DNP-10	Each cantilever has four tips and their nominal tip radius is 20 nm (with possible maximum at 60 nm). Based on the specifications, we use tip D with resonance frequency of 18 kHz, and nominal spring constant of 0.06 N/m.
AFM	JPK	JPK Nanowizard II mounted on Zeiss Axiovert 200	