

Materials List for

# Tension Gauge Tether Probes for Quantifying Growth Factor Mediated Integrin Mechanics and Adhesion

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jove.com/video/63529

## Materials

Name	Company	Catalog Number	Comments
(3-Aminopropyl)triethoxysilane	Millipore Sigma	440140	Surface Preparation
3-hydroxypicolinic acid (3-HPA)	Millipore Sigma	56197	Maldi-TOF-MS matrix
Acetic Acid, Glacial	Fisher Scientific	A38S	Diluting EGF
Acetonitrile (HPLC)	Fisher Scientific	A998SK	Oligonucleotide Preparation
Alexa Fluor 488 Phalloidin	Cell Signaling Technology	8878S	Immunocytochemistry
Ammonium Chloride	Fisher Scientific	A687	Immunocytochemistry
Anti-Paxillin antibody [Y113]	Abcam	ab32084	Immunocytochemistry
BD Syringes only with Luer-Lok	BD bioscience	309657	Surface Preparation
Bio-Gel P-2	Bio-Rad	1504118	Oligonucleotide Preparation
Bovine Serum Albumin (BSA) Protease-free Powder	Fisher Scientific	BP9703100	Surface Preparation
Cos-7 cells	ATCC	CRL-1651	Cell Culture, Passage numbers 11-20
Coverslip Mini-Rack, for 8 coverslips	Fisher Scientific	C14784	Surface Preparation
c(RGDfK(PEG-PEG)), PEG=8-amino-3,6-dioxaoctanoic acid	Vivitide	PCI-3696-PI	Oligonucleotide Preparation
Cy3B NHS ester	GE Healthcare	PA63101	Oligonucleotide Preparation
Dimethylformamide	Millipore Sigma	PHR1553	Oligonucleotide Preparation
DMEM with L-Glutamine, 4.5g/L Glucose and Sodium Pyruvate	Fisher Scientific	MT10013C	Cell Culture
Epidermal Growth Factor human EGF	Millipore Sigma	E9644	Cell Culture
Ethanol, 200 proof (100%)	Fisher Scientific	22032601	Surface Preparation
Falcon Standard Tissue Culture Dishes	Fisher Scientific	08-772E	Surface Preparation
Fetal Bovine Serum	Fisher Scientific	10-438-026	Cell Culture
Fluorobrite DMEM	Fisher Scientific	A1896701	Cell Culture
Goat anti-Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Alexa Fluor 647	Invitrogen	A-21244	Immunocytochemistry

Goat Serum	Fisher Scientific	16-210-064	Immunocytochemistry
Hank's balanced salts (HBSS)	Fisher Scientific	14-170-161	Cell Culture
Horse Serum	Fisher Scientific	16050130	Immunocytochemistry
Hydrogen Peroxide	Fisher Scientific	H325-500	Surface Preparation
Nanosep MF centrifugal devices	Pall laboratory	ODM02C35	Oligonucleotide Preparation
NHS-azide	Fisher Scientific	88902	Oligonucleotide Preparation
Nitrogen Gas Cylinder	Airgas		Surface Preparation
No. 2 round glass coverslips - 25 mm	VWR	48382-085	Surface Preparation
Parafilm M Laboratory Film	Fisher Scientific	13-374-10	Surface Preparation
Paraformaldehyde 16%	Fisher Scientific	50-980-487	Immunocytochemistry
PBS, 1X	Fisher Scientific	21-030-CV	Surface Preparation/ Immunocytochemistry
Penicillin-Streptomycin (5,000 U/mL)	Fisher Scientific	15-070-063	Cell Culture
PYREX Low Form Griffin Beakers	Fisher Scientific	02-540G	Surface Preparation
Sodium Ascorbate	Fisher Scientific	18-606-310	Oligonucleotide Preparation
Sodium Bicarbonate	Fisher Scientific	S233	Oligonucleotide Preparation
Sodium Chloride	Fisher Scientific	BP358	Surface Preparation
Streptavidin	Fisher Scientific	434301	Surface Preparation
Sulfo-NHS-LC-Biotin	Fisher Scientific	21335	Surface Preparation
Sulfuric Acid	Fisher Scientific	A300-500	Surface Preparation
TEAA	Fisher Scientific	NC0322726	Oligonucleotide Preparation
Triethylamine	Millipore Sigma	471283	Oligonucleotide Preparation
Trifluoroacetic Acid (TFA)	Fisher Scientific	PI28901	Oligonucleotide Preparation
THPTA	Fisher Scientific	NC1296293	Oligonucleotide Preparation
Triton X 100 Detergent Surfact Ams Solution	Fisher Scientific	85111	Immunocytochemistry
Water, DNA Grade, DNASE, Protease free	Fisher Scientific	BP24701	Oligonucleotide Preparation
<b>Equipment</b>			
Agilent AdvanceBio Oligonucleotide C18 column, 4.6 x 150 mm, 2.7 µm	Agilent	653950-702	Oligonucleotide Preparation
High-performance liquid chromatography	Agilent	1100	Oligonucleotide Preparation
Low Speed Orbital Shaker	Fisher Scientific	10-320-813	Immunocytochemistry
Matrix-assisted laser desorption/ionization time-of-flight mass spectrometer (MALDI-TOF-MS)	Voyager STR		Oligonucleotide Preparation
Molecular Probes Attofluor Cell Chamber	Fisher Scientific	A7816	Surface Preparation
Nanodrop 2000 UV-Vis Spectrophotometer	Thermo Fisher		Oligonucleotide Preparation
Nikon Eclipse Ti inverted microscope	pe Nikon		Microscopy
Nikon Perfect Focus System	Nikon		Microscopy
NIS Elements software	Nikon		Microscopy
ORCA-Flash4.0 V3 Digital CMOS camera	Hamamatsu		Microscopy
Quad band TIRF 405/488/561/647 cube	CHROMA		Microscopy
RICM Cube	CHROMA		Microscopy
SOLA v-nIR Light Engine	Lumencor		Microscopy
Thermo Forma Steri Cycle 370 CO2 Incubator	Fisher Scientific		Cell Culture

VWR 75D Ultrasonic Cleaner	VWR	13710	Surface Preparation
<b>Data Analysis</b>			<b>Use</b>
Fiji (Image J)		<a href="https://imagej.net/software/fiji/downloads">https://imagej.net/software/fiji/downloads</a>	Quantitative Analysis
Graph Pad Prism	Graph Pad		Statistical Analysis
<b>Oligo name</b>	<b>5' modification/ 3' modification</b>	<b>Sequence (5' to 3')</b>	<b>Use</b>
Alkyne-21-BHQ2	5' Hexynyl/ 3' BHQ_2	GTGAAATACCGCACAGATGCG	Top strand TGT probe
56 pN TGT	5' Biosg/TTTTTT/iUniAmM	CGCATCTGTGCGGTATTTCACTTT	Bottom strand TGT probe
12 pN TGT	5' AmMC6/ 3' BioTEG	CGCATCTGTGCGGTATTTCACTTT	Bottom strand TGT probe