

Materials List for:

Visualization of Surface-tethered Large DNA Molecules with a Fluorescent Protein DNA Binding Peptide

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Materials

Name	Company	Catalog Number	Comments
1. DNA Biotinylation			
1.1) Biotinylation of blunt-end DNA using Terminal Transferase (TdT)			
Terminal Transferase	New England Biolabs	M0315S	Provided with 10x reaction buffer, 2.5 mM cobalt chloride
Biotin-11-dUTP	Invitrogen	R0081	Biotin-ddNTP is also available
T4GT7 Phage DNA	Nippon Gene	318-03971	
Ethylenediaminetetraacetic acid	Sigma-Aldrich	E6758	EDTA
1.2) Biotinylation of sticky end DNA Using DNA Ligase			
T4 DNA Ligase	New England Biolabs	M0202S	Provided with 10x reaction buffer
Lambda Phage DNA	Bioneer	D-2510	Also available at New England Biolabs
2. Functionalized Surface Derivatization			
2.1) Piranha Cleaning			
Coverslip	Marienfeld-Superior	0101050	22 mm x 22 mm, No. 1 Thickness
Teflon rack			Custom Fabrication
PTFE Thread Seal Tape	Han Yang Chemical Co. Ltd.	3032292	Teflon™ tape
Sulfuric acid	Jin Chemical Co. Ltd.	S280823	H ₂ SO ₄ , 95% Purity
Hydrogen peroxide	Jin Chemical Co. Ltd.	H290423	H ₂ O ₂ , 35% in water
Sonicator	Daihan Scientific Co. Ltd.	WUC-A02H	Table-top Ultrasonic Cleaner
2.2) Aminosilanization on Glass Surface			
N-[3-(Trimethoxysilyl)propyl] ethylenediamine	Sigma-Aldrich	104884	
Glacial Acetic Acid	Duksan Chemicals	414	99% Purity
Methyl Alcohol	Jin Chemical Co. Ltd.	M300318	99.9% Purity
Polypropylene Container	Qorpak	PLC-04907	
Ethyl Alcohol	Jin Chemical Co. Ltd.	A300202	99.9% Purity
2.3) PEGylation of the coverslip			
Sodium Bicarbonate	Sigma-Aldrich	S5761	
Syringe Filter	Sartorius	16534-----K	
Biotin-PEG-SC	Laysan Bio	Biotin-PEG-SC-5000	
mPEG-SVG	Laysan Bio	MPEG-SVA-5000	
Acetone	Jin Chemical Co. Ltd.	A300129	99% Purity
Microscope Slides	Marienfeld-Superior	1000612	~76 mm x 26 mm x 1 mm
3. Assembling a Flow Chamber			
Acrylic Support			Custom Fabrication

Double-sided Tape	3M		Transparent type
Quick-dry Epoxy	3M		
Polyethylene Tubing	Cole-Parmer	06417-11, 06417-21	
Gas Tight 250 μ l Syringe	Hamilton	81165	
Syringe Pump	New Era Pump Systems Inc.	NE-1000	
4. Sample Loading into Flow Chamber			
Neutravidin	Thermo Scientific	31000	
Tris base	Sigma-Aldrich	T1503-5KG	Trizma base
Microscope	Olympus	IX70	
EMCCD Camera	Q Imaging	Rolera EM-C2	
Solid-state Laser (488 nm)	Oxxius	LBX488	
Alconox	Alconox Inc.		