

Materials List for:

Test Samples for Optimizing STORM Super-Resolution Microscopy

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Materials

Name	Company	Catalog Number	Comments
Labtek Imaging chamberglass	Fisher	CBR-166-390E	Sample preparation
Inverted Microscope	Olympus	IX71	* See below for alternatives
100 X TIRF Objective Lens	Olympus	UAPON 100XOTIRF	* See below for alternatives
EMCCD Camera	Andor	iXon 897	* See below for alternatives
640 nm laser	Toptica	iBEAM-SMART-640-S	*150 mW - for imaging Alexa 647 or Cy5 dyes
LabVIEW	National Instruments		*Acquisition software (controlling hardware)
PC	Dell		Windows XP (64 bit), Intel Xeon E5420 CPU, 16 GB RAM *Instrument control and image processing
ImageJ			Image analysis and processing http://rsbweb.nih.gov/ij
rainSTORM	Laser Analytics Group (Cambridge) software		http://laser.cheng.cam.ac.uk/wiki/index.php/Resources
MATLAB	Running rainSTORM		http://www.mathworks.co.uk/products/matlab/
*Example of self-built STORM/PALM microscopes			Also see reference 29 http://code.google.com/p/quickpalm/wiki/Tutorial_CustomMicroscope
*Commercial STORM/PALM super-resolution microscopes			Leica SR GSD, Nikon N-STORM, Vutara SR-200, Zeiss Elyra P.1, DeltaVision OMX Blaze (Monet Localization) Alternatives to self-built microscopes

Table 1. Materials & Equipment

Name	Company	Catalog Number	Comments
PBS (10X)	Fisher	VX70013065	1; 2; 3; 4
Poly-L-Lysine	Sigma	P4707	1.1; 2.1
Dextran-Alexa fluor 647	Invitrogen	D-22914	1.2
General actin buffer	Cytoskeleton Inc	BSA01	2.2
Preformed-actin filaments	Cytoskeleton Inc	AKF99	2.2
Phalloidin-Alexa fluor 647	Invitrogen	A22287	2.2
TetraSpeck Microspheres (0.1 micron)	Invitrogen	T-7279	3.1
HeLa cells	ATCC	CCL-2	4.1
DMEM	Fisher	VX31966021	4.1
FBS	Fisher	VX10500064	4.1
Pen/Step	Invitrogen	15070063	4.1

Plastic dishes	Invitrogen	734-0006	4.1
EGF - Alexa fluor 647	Invitrogen	E35351	4.3
BSA	Sigma	A7906	4.3, 4.4
Formaldehyde - 10 % solution EM grade	Polysciences	04018-1	4.2
Catalase	Sigma	C100	5.1
Glucose oxidase	Sigma	G2133	5.1
KCl	Sigma	P9541	5.1
TCEP	Sigma	C4706	5.1
Tris	Sigma	93352	5.1
Glucose	Sigma	C7528	5.2
MEA-HCl	Sigma	M6500	5.3
Glycerin	Sigma	G2289	5.1; 5.2

Table 2. Reagents