

Materials List for

Spot Variation Fluorescence Correlation Spectroscopy for Analysis of Molecular Diffusion at the Plasma Membrane of Living Cells

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Materials

Name	Company	Catalog Number	Comments
Alignment tool	Spanner Wrench for SM1-Threaded Retaining Rings	Thorlabs	SPW602
Avalanche Photodiode and Single Photon Counting Module (SPCM)	Single-Photon Counting Module, Avalanche Photodiode	Excelitas	SPCM-AQRH-15
	BNC 50 Ω plug to 50 Ω plug lead 2 m	RS Components	742-4315
	Coaxial cable 415 Cinch Connectors, RG-316, 50 Ω With connector, 1.22 m, RoHS2	RS Components	885-8172
	Tee 50Ω RF Adapter BNC Plug to BNC Socket 0 → 1GHz	RS Components	546-4948
	Brennenstuhl 2.5 m, 8 Socket Type E – French Extension Lead, 230 V	RS Components	768-5500
	Mascot, 6W Plug In Power Supply 5V dc, 1.2A, 1 Output Switched Mode Power Supply, Type C	RS Components	452-8394
	Crystek CCSMACL-MC-24 Reference Oscillator Power Cable RF Adapter	RS Components	792-4079
Fluorescence filtering	535/70 ET Bandpass, AOI 0° Chroma Diameter 25 mm	AHF filter	F47-539
	Laser Beamsplitter zt488 RDC, AOI 45° Chroma 25.5 x 36 x 1 mm	AHF filter	F43-088
	496/LP BrightLine HC Longpass Filter, AOI 0° Chroma Diameter 25	AHF filter	F37-496
Hardware correlator	80 MHz Digital Correlator	Correlator.com	Flex02-12D
Laser	LASER LASOS LDM-XT fiber coupled, 488 nm, 65 mW	Lasos	BLD-XT 488100
Laser safety	High-Performance Black Masking Tape, 1" x 180' (25 mm x 55 m) Roll	Thorlabs	T743-2.0
	Lens Tissues, 25 Sheets per Booklet, 5 Booklets	Thorlabs	MC-5
	Laser Safety Glasses, Light Orange Lenses, 48% Visible Light Transmission	Thorlabs	LG3B

Microscope	Zeiss Axiovert 200M Motorized Inverted Fluorescence Microscope Fine and coarse focusing, reflector turret rotation, objective nosepiece rotation, switching camera ports, and internal light shutters	Carl Zeiss	
	C-Apochromat 40x/1,2 W Korr.selected for FCS (D=0.14-0.19 mm) (WD=0.28 mm at D=0.17 mm), UV-VIS-IR	Carl Zeiss	421767-9971-711
	Adapter W0.8 / M27x0.75 H "5"	Carl Zeiss	000000-1698-345
	Middle ring W0.8 - W0.8 H "5"	Carl Zeiss	000000-1698-347
Optical path	D25.4mm Mirror, Protected Silver	Thorlabs	PF10-03-P01
	D25.4mm, F=60.0.mm, Visible Achromat	Thorlabs	AC254-060-A
	D25.4mm, F=35.0.mm, Visible Achromat	Thorlabs	AC254-035-A
	25 µm mounted pinhole	Thorlabs	P25S I
	25.4mm Mounted Zero, Order 1/2 Waveplate 488 nm	Thorlabs	WPH10M-488 (HWP)
	20mm Polarizing Beamsplitter Cube 420-680 nm	Thorlabs	PBS201
	Rotation Stage 56 mm x 26 mm Threaded ID	Thorlabs	RSP1/M
	52 mm x 52 mm Kinematic Platform Mount	Thorlabs	KM100B/M
	Adjustable Prism Clamp	Thorlabs	PM3/M
	Beam block - active area 19 mm x 38 mm	Thorlabs	LB1/M
	Iris Diaphragm 1 mm to 25 mm Aperture	Thorlabs	ID25/M
	Left-Handed Kinematic Cylindrical Lens Mount	Thorlabs	KM100CL
	1" Optic Holder, M4 Tap	Thorlabs	MFF101/M
	1" Stackable Lens Tube	Thorlabs	SM1L03
	Stackable Lens Mount for 1" optic-usable depth ½	Thorlabs	SM1L05
	Stackable Lens Mount For 1"Optic-usable Depth 2"	Thorlabs	SM1L20
	Small Optical Rails 600mm, metric	Thorlabs	RLA600/M
	Small Optical Rails 75mm, metric	Thorlabs	RLA075/M
	Small Optical Rails 150mm, metric	Thorlabs	RLA150/M
	Rail Carrier, Counterbored Hole 1"x 1"	Thorlabs	RC1
	Rail Carrier, Perpendicular Dovetail	Thorlabs	RC3
	High Precision Translating Lens Mount for 1 inch	Thorlabs	LM1XY/M
	½ " (12mm) Dovetail Translation Stage	Thorlabs	DT12/M
	Rail Clamps	Thorlabs	CL6
	Metric XYZ Translation Stage (Includes PT102)	Thorlabs	PT3/M
	Black Rubberized Fabric	Thorlabs	BK5

	Ball Driver kit/ 6 tools	Thorlabs	BD-KIT/M
	Adapter with External M6 x 1.0 Threads and External M4 x 0.7 Threads	Thorlabs	AP6M4M
	Mounting Base, 25 mm x 58 mm x 10 mm, 5 Pack	Thorlabs	BA1S/M-P5
	Lens Mount for 25.4mm optic	Thorlabs	LMR1/M
	SM1 FC/APC Adapter	Thorlabs	SM1FCA
	Kinematic Mirror Mount For 1 inch Optics	Thorlabs	KM100
	Silicon Power Head, 400-1100nm, 50mW	Thorlabs	S120C
	12.7 mm Post Holders, Spring-Loaded Hex-Locking Thumbscrew, L=50 mm, 5 Pack	Thorlabs	PH50/M-P5
	Post Holder with Spring-Loaded Hex-Locking Thumbscrew, L=20 mm	Thorlabs	PH20/M
	12.7 mm x 50 mm Stainless Steel Optical Post, M4 Stud, M6-Tapped Hole, 5 Pack	Thorlabs	TR50/M-P5
	12.7 mm x 75 mm Stainless Steel Optical Post, M4 Stud, M6-Tapped Hole, 5 Pack	Thorlabs	TR75/M-P5
	USB Power and Energy Meter Interface	Thorlabs	PM100USB
	12.7 mm x 30 mm Stainless Steel Optical Post, M4 Stud, M6-Tapped Hole	Thorlabs	TR30/M
	12.7 mm x 20 mm Stainless Steel Optical Post, M4 Stud, M6-Tapped Hole	Thorlabs	TR20/M
	750 mm long Structural Rail (detection box)	Thorlabs	XE25L750/M
	350 mm long Structural Rail (detection box)	Thorlabs	XE25L350/M
	Quick Corner Cube for 25 mm Rails	Thorlabs	XE25W3
	Right-Angle Bracket for 25 mm Rails	Thorlabs	XE25A90
	Black posterboard 20" x 30" (508 mm x 762 mm), 1/16" (1.6 mm) Thick, 5 Sheets	Thorlabs	TB5
	Hinge for 25 mm Rail Enclosures	Thorlabs	XE25H
	Lid Stop for 25 mm Rail Enclosures	Thorlabs	XE25LS
	M4 Cap Screw Kit	Thorlabs	HW-KIT1/M
	M6 Cap Screw Kit and Hardware kit	Thorlabs	HW-KIT2/M
	Table Clamp, L-Shape, 5 Pack	Thorlabs	CL5-P5
	SM1 Ring-Actuated Iris Diaphragm (Ø0.8 - Ø12 mm)	Thorlabs	SM1D12D
	Ø1" SM1-Mounted Frosted Glass Alignment Disk w/Ø1 mm Hole	Thorlabs	DG10-1500-H1-MD
	Honeycomb Optical Table Top, Standa	Standa	1HB10-15-12

	Optical Table support, Standa	Standa	1TS05-12-06-AR
Sample nano-positioning	Precision XYZ Nanopositioning	Physik Instrumente	PI P527-3.CD
	Digital Multi-Channel Piezo Co, 3 Channels, -30 to 130 V Sub- D Connector(s), Capacitive Sensors,	Physik Instrumente	PI E727-3.CD
Temperature chamber	Zeiss 200M Inverted Microscope Incubator System MATT BLK	Digital Pixel	
	Dual Channel Microprocessor Temperature Controller	Digital Pixel	DP_MTC_2000_DUO
	Two Vibration Free Heater Modules	Digital Pixel	DP_150_VF
	PT100 Temperature Sensor	Digital Pixel	DP_P100_TS
Biological Reagents and Materials			
Cell culture and transfection	Cos7 cells	ATCC®	CRL-1651™
	8- well Lab-Tek chambers	Thermo Fisher Scientific	155411PK
	Dulbecco's Modified Eagle Medium (DMEM)	Thermo Fisher Scientific	11965092
	Fetal bovine serum	Thermo Fisher Scientific	16000044
	L-glutamine	Thermo Fisher Scientific	25030081
	PBS buffer	Thermo Fisher Scientific	14190144
	PenStrep	Thermo Fisher Scientific	15140122
	PolyJet Transfection Reagent	SignaGen Laboratories	SL100688
Cholesterol content measurement	Amplex Red Cholesterol Assay Kit	Thermo Fisher Scientific	A12216
	Protease Inhibitor Cocktail	Thermo Fisher Scientific	87786
	Phosphatase Inhibitor Cocktail	Thermo Fisher Scientific	78420
	ROTI Nanoquant Working Solution	Roth	K880
	GloMax Discover Microplate Reader	Promega	GM3000
svFCS measurements	HBSS buffer	Thermo Fisher Scientific	14025092
	Hepes buffer	Thermo Fisher Scientific	15630080
	Cholesterol oxidase	Sigma-Aldrich	C8868
	Rhodamine 6G	Sigma-Aldrich	83697-1G