

Observing Islet Function and Islet-Immune Cell Interactions in Live Pancreatic Tissue Slices

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Materials

Name	Company	Catalog Number	Comments
#3 Style Scalpel Handle	Fisherbrand	12-000-163	
1 M HEPES	Fisher Scientific	BP299-100	HEPES Buffer, 1M Solution
10 cm Untreated Culture Dish	Corning	430591	
10 mL Luer-Lok Syringe	BD	301029	BD Syringe with Luer-Lok Tips
27 G Needle	BD	BD 305109	BD General Use and PrecisionGlide Hypodermic Needles
35 mm coverglass-bottom Petri dish	Ibidi	81156	μ-Dish 35 mm, high
50 mL syringe	BD	309653	
8-well chambered coverglass	Ibidi	80826	μ-Slide 8 Well
APC anti-mouse CD8a antibody	Biologend	100712	
BSA	Fisher Scientific	199898	
Calcium chloride	Sigma	C5670	CaCl ₂
Calcium chloride dihydrate	Sigma	C7902	CaCl ₂ (dihydrate)
Compact Digital Rocker	Thermo Fisher Scientific	88880020	
Confocal laser-scanning microscope	Leica	SP8	Pinhole = 1.5-2 airy units; acquired with 10x/0.40 numerical aperture HC PL APO CS2 dry and 20x/0.75 numerical aperture HC PL APO CS2 dry objectives at 512 × 512 pixel resolution
D-(+)-Glucose	Sigma	G7021	C ₆ H ₁₂ O ₆
ddiH ₂ O			
Dithizone	Sigma-Aldrich	D5130-10G	
DMSO	Invitrogen	D12345	Dimethyl sulfoxide
Ethanol	Decon Laboratories	2805	

Falcon 35 mm tissue culture dish	Corning	353001	Falcon Easy-Grip Tissue Culture Dishes
FBS	Gibco	10082147	
Feather No. 10 Surgical Blade	Electron Microscopy Sciences	7204410	
fluo-4-AM	Invitrogen	F14201	cell-permeable Ca ²⁺ indicator
Gel Control Super Glue	Loctite	45198	
Graefe Forceps	Fine Science Tools	11049-10	
Hardened Fine Scissors	Fine Science Tools	14090-09	
HBSS	Gibco	14025092	Hanks Balanced Salt Solution
HEPES	Sigma	H4034	C ₈ H ₁₈ N ₂ O ₄ S
Ice bucket	Fisherbrand	03-395-150	
Isoflurane	Patterson Veterinary	NDC 14043-704-05	
Johns Hopkins Bulldog Clamp	Roboz Surgical Store	RS-7440	Straight; 500-900 Grams Pressure; 1.5" Length
Kimwipes	Kimberly-Clark Professional	34705	Kimtech Science™ Kimwipes™ Delicate Task Wipers, 2-Ply
LIVE/DEAD Viability/Cytotoxicity Kit	Invitrogen	L3224	This kit contains the calcein-AM live cell dye.
Low glucose DMEM	Corning	10-014-CV	
Magnesium chloride hexahydrate	Sigma	M9272	MgCl ₂ (hexahydrate)
Magnesium sulfate heptahydrate	Sigma	M2773	MgSO ₄ (heptahydrate)
Magnetic Heated Platform	Warner Instruments	PM-1	Platform for imaging chamber for dynamic stimulation recordings
Microwave	GE	JES1460DSWW	
Nalgene Syringe Filter	Thermo Fisher Scientific	726-2520	
No.4 Paintbrush	Michaels	10269140	
Open Diamond Bath Imaging Chamber	Warner Instruments	RC-26	Imaging chamber for dynamic stimulation recordings
Oregon Green 488 BAPTA-1-AM	Invitrogen	O6807	cell-permeable Ca ²⁺ indicator
Overnight imaging chamber	Okolab	H201-LG	
PBS	Thermo Fisher Scientific	20012050	To make agarose for slice generation
PE-labeled insulin tetramer	Emory Tetramer Research Core	sequence YAIENYLEL	
Penicillin Streptomycin	Gibco	15140122	
Potassium chloride	Sigma	P5405	KCl
Potassium phosphate monobasic	Sigma	P5655	KH ₂ PO ₄
Razor Blades	Electron Microscopy Sciences	71998	For Vibratome; Double Edge Stainless Steel, uncoated
RPMI 1640	Gibco	11875093	
SeaPlaque low melting-point agarose	Lonza	50101	To make agarose for slice generation
Slice anchor	Warner Instruments	64-1421	
Slice anchor (dynamic imaging)	Warner Instruments	640253	Slice anchor for dynamic imaging chamber
Sodium bicarbonate	Sigma	S5761	NaHCO ₃
Sodium chloride	Sigma	S5886	NaCl
Sodium phosphate monohydrate	Sigma	S9638	NaH ₂ PO ₄ (monohydrate)
Soybean Trypsin Inhibitor	Sigma	T6522-1G	Trypsin inhibitor from Glycine max (soybean)
Stage Adapter	Warner Instruments	SA-20MW-AL	To fit imaging chamber for dynamic stimulation recordings on the microscope stage

Stage-top incubator	Okolab	H201	
Stereoscope	Leica	IC90 E MSV266	
SYTOX Blue Dead Cell Stain	Invitrogen	S34857	blue-fluorescent nucleic acid stain
Transfer Pipet	Falcon	357575	Falcon™ Plastic Disposable Transfer Pipets
Valve Control System	Warner Instruments	VCS-8	System for dynamic stimulation recordings
Vibratome VT1000 S	Leica	VT1000 S	
Water bath	Fisher Scientific	FSGPD02	Fisherbrand Isotemp General Purpose Deluxe Water Bath GPD 02