

Confocal Laser Scanning Microscopy of Calcium Dynamics in Acute Mouse Pancreatic Tissue Slices

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Materials

Name	Company	Catalog Number	Comments
Equipment			
Analytical balance KERN ALJ 120-4	KERN & SOHN GmbH	ALJ 160-4A	
Confocal microscope Leica TCS SP5 II Upright setup	Leica	5100001578	
Confocal microscope Leica TCS SP5 AOBS Tandem II setup	Leica		
Cork pad 15 cm x 15 cm			
Corning 15 mL centrifuge tubes	Merck KGaA, Darmstadt, Germany	CLS430790	
Corning Round Ice Bucket with Lid, 4 L	Fischer Scientific, Leicestershire, UK	432124	
Double edge razor blade	Personna, USA		
Dumont #5 - Fine Forceps	FST, Germany	11254-20	
Eppendorf Safe-Lock Tubes 0.5 mL	Eppendorf	0030 121.023	
Erlenmeyer flask 200 mL	IsoLab, Germany	027.01.100	
Fine Scissors - ToughCut	FST, Germany	14058-11	
Flat orbital shaker IKA KS 260 basic	IKA	Ident. No.: 0002980200	
Glass lab bottle 1000 mL	IsoLab, Germany	091.01.901	
Hartman Hemostat, curved	FST, Germany	13003-10	
HCX APO L 20x/1.00 W HCX APO L (water immersion objective, 20x, NA 1.0)	Leica	15507701	
Measuring cylinder 25 mL	IsoLab, Germany	015.01.025	
Micromanipulator Control box SM-7, Keypad SM-7	Luigs & Neumann	200-100 900 7311, 200-100 900 9050	
Microwave oven	Gorenje, Slovenia	MO20MW	
Osmometer Gonotec 010	Gonotec, Berlin, Germany	OSMOMAT 010 Nr. 01-02-20	
Paint brush	Faber-Castell, No.2		Any thin soft round paint brush No.2, preferably black
Paper towels			

Perifusion pumps	Ismatec	ISM 827	Reglo Analog MS - 4/8
Petri dish 100/20 mm	Sarstedt	83.3902	
Petri dish 35/10 mm	Greiner bio-one	627102	
Petri dish 35 x 10 mm Nunclon Delta	Thermo Fischer Scientific, Waltham, MA USA	153066	NON-STICKY for agarose blocks
pH meter inoLab pH Level 1	WTW, Weilheim, Germany	E163694	
Pipette 1000 mL	Eppendorf	3121 000.120	
Pipette 50 mL	Eppendorf	3121 000.066	
Push pins 23 mm	Deli, Ningbo, China	E0021	
Screw cap tube, 15 mL	Sarstedt	62.554.502	
Semken Forceps	FST, Germany	11008-13	
Stabilizing ring for Erlenmeyer flask	IsoLab, Germany	027.11.048	
Stereomicroscope Nikon SMZ 745	Nikon, Melville, NY USA		
Syringe Injekt Solo 5 mL	Braun, Melsungen, Germany	4606051V	
Syringe needle 0.30 x 12 mm (30 G x 1/2")	Braun, Melsungen, Germany	4656300	
Temperature controller	Luigs & Neumann	200-100 500 0150, 200-150-500-145	Slice mini chamber, Temperature controller TC 07
Tubings for perifusion system	Ismatec	SC0310	Ismatec Pharmed 1.14 mm(ID) + silicone tubing 1.0 (ID) x 1.8 mm(OD)
Ultrasonic bath Studio GT-7810A	Globaltronics		
Vibrotome Leica VT 1000 S	Leica, Nussloch, Germany	14047235613	
Volumetric flask 1000 mL	IsoLab, Germany	013.01.910	
Vortex mixer Neolab 7-2020	Neolab	7-2020	
Water bath Thermo Haake open-bath circulator	Thermo Fisher Scientific	Z527912	
Material/Reagent			
Calcium chloride dihydrate - CaCl ₂ ·2H ₂ O	Sigma Aldrich, Germany	C5080-500G	
D-(+)-glucose	Sigma Aldrich, Germany	G8270-1KG	
Dimethyl sulfoxide	Sigma Aldrich	D4540-100ML	
DL-lactic acid	Sigma Aldrich, Germany	L1250-500ML	
Dulbecco's Phosphate Buffered Saline	Merck KGaA, Darmstadt, Germany	D8662-500ML	
Gas mixture containing 95% O ₂ and 5% CO ₂ at barometric pressure			
Glue Wekem sekundenkleber WK-110	Wekem GmbH, Bergkamen, Germany	WK 110-020	
HEPES	Sigma Aldrich, Germany	H3375-250G	
L-(+)-ascorbic acid	Sigma Aldrich, Germany	A9,290-2	
LIVE/DEAD Viability/Cytotoxicity Kit, for mammalian cells	Thermo Fischer Scientific, Waltham, MA USA	L3224	
Magnesium chloride hexahydrate - MgCl ₂ ·2H ₂ O	Sigma Aldrich, Germany	M2670-500G	
Myo-inositol	Sigma Aldrich, Germany	I5125-100G	
Oregon Green 488 BAPTA-1, AM	Invitrogen (Thermo Fisher Scientific)	O6807	cell-permeable Ca ²⁺ indicator (excitation/emission: 495/523 nm)
Pluronic F-127 (20% Solution in DMSO)	Invitrogen (Thermo Fisher Scientific)	P3000MP	polaxamer: nonionic triblock copolymer
Potassium chloride - KCl	Sigma Aldrich, Germany	31248	
SeaPlaque GTG agarose	Lonza, Rockland, USA	50111	

Sodium bicarbonate - NaHCO ₃	Honeywell, Germany	31437-500G	
Sodium chloride - NaCl	Honeywell, Germany	31434-1KG	
Sodium hydroxide - NaOH	Sigma Aldrich, Germany	30620	
Sodium phosphate monobasic- NaH ₂ PO ₄	Sigma Aldrich, Germany	S0751-500G	
Sodium pyruvate	Sigma Aldrich, Germany	15990-100G	
Software			
FIJI			FIJI is an open source project
LASAF	Leica microsystems, Inc.		
Matlab	Mathworks		
Python	Python Software Foundation		Python is an open source project