

Materials List for:

# Electromechanical Assessment of Optogenetically Modulated Cardiomyocyte Activity

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## Materials

Name	Company	Catalog Number	Comments
<b>Equipment - Cell isolation/ Culturing/Transduction</b>			
Adeno-X Adenoviral System 3 CMV	TaKaRa, Clontech Laboratories, Inc., Mountain View, California, USA		
Aortic cannula	Radnoti		4.8 OD x 3.6 ID x 8-9 L mm
Coverslips ø 16 mm, Thickness No. 0	VWR International GmbH, Leuven, Belgium	631-0151	Borosilicate Glass
Griffin Silk, Black, 2 m Length, Size 3, 0.5 mm	Samuel Findings, London, UK	TSGBL3	
Incubator	New Brunswick, Eppendorf, Schönenbuch, Switzerland	Galaxy 170S	
Langendorff-perfusion set-up	Zitt-Thoma Laborbedarf Glasbläserei, Freiburg, Germany		Custom-made
Langendorff-pump	Ismatec, Labortechnik-Analytik, Glattbrugg-Zürich, Switzerland	ISM444	
Mesh: Nylon Monodur filter cloth	Cadisch Precision Meshes Ltd		800 µm holes, 1 m wide
Neubauer chamber	VWR International GmbH, Leuven, Belgium	717806	
Rabbit, New Zealand White	Charles River	Strain Code: 052	
Scissors	Aesculap AG, Tuttlingen, Germany	BC774R	Bauchdeckenschere ger. 18cm
Sterile filter, 0.22 µm	Merck, Darmstadt, Germany	SLGP033RB	
<b>Equipment - Patch-clamp</b>			
Amplifier	AxonInstruments, Union City, CA, United States	Axopatch 200B	
Coverslip ø 50 mm, Thickness No. 1	VWR International GmbH, Leuven, Belgium	631-0178	Borosilicate Glass
Digitizer Axon Digidata	Molecular Devices, San José, CA, United States	1550A	
Filter (530/20)	Leica Microsystems, Wetzlar, Germany	11513878	BZ:00
Filter (630/20)	Chroma Technology, Bellows Falls, Vermont, United States	227155	
Headstage	AxonInstruments, Union City, CA, United States	CV203BU	
Interface	Scientifica, Uckfield, UK	1U Rack, 352036	
LED 525 nm	Luminus Devices, Sunnyvale, CA, United States	PT-120-G	

LED control software	Essel Research and Development, Toronto, Canada		
LED control system	custom-made		
Micropipette Puller	Narishige Co., Tokyo, Japan	PP-830	
Microscope inverted	Leica Microsystems, Wetzlar, Germany	DMI4000B	
Motorised Micromanipulator	Scientifica, Uckfield, UK	PatchStar	
Optical power meter	Thorlabs, Newton, NJ, United States	PM100D	
Silicone Grease	RS Components, Corby, UK	494-124	
Silver wire	A-M Systems, Sequim, WA, United States	787500	Silver, Bare 0.015", Coated 0.0190", Length 25 Feet
Soda lime glass capillaries	Vitrex Medical A/S, Vasekaer, Denmark	160213 BRIS, ISO12772	1.55 OD x 1.15 ID x 75 L mm
Software Axon pClamp	Molecular Devices, San José, CA, United States	Version 10.5	
Software MatLab2017	The MathWorks, Inc.		
Stage micrometer	Graticules Optics LTD, Tonbridge, UK	1 mm	
<b>Equipment - Carbon fiber</b>			
Carbon fibers	provided from Prof. Jean-Yves Le Guennec		BZ:00
Digitizer Axon Digidata	Molecular Devices, Sunnyvale, CA, United States	1550B	
Filter (530/20)	Leica Microsystems, Wetzlar, Germany	11513878	
Filter (630/20)	Chroma Technology, Bellows Falls, Vermont, United States	227155	
Fluorescence System Interface	IonOptix, Milton, MA United States	FSI-800	2.0 OD x 1.16 ID x 100 L mm
Force Transducer System	Aurora Scientific Inc., Ontario, Canada	406A	
Glass capillaries for force measurements	Harvard Apparatus, Holliston, Massachusetts, United States	GC200F-10	
Interface National Instruments	National Instruments, Budapest, Hungary	BNC-2110	
LED 525 nm	Luminus Devices, Sunnyvale, CA, United States	PT-120-G	
LED control box	Essel Research and Development, Toronto, Canada		
LED control system	custom-made		
Microcontroller	Parallax Inc., Rocklin, California, United States	Propeller	
Micropipette Puller	Narishige Co., Tokyo, Japan	PC-10	
Microscope inverted	Leica Microsystems, Wetzlar, Germany	DMI4000B	
MyoCam-S camera	IonOptix, Dublin, Ireland		
MyoCam-S camera Power	IonOptix, Milton, MA, United States	MCS-100	
MyoPacer Field Stimulator	IonOptix Cooperation, Milton, MA, United States	MYP100	
Piezo Motor	Physik Instrumente (PI) GmbH & Co. KG, Karlsruhe, Germany	E-501.00	
Silicone Grease	RS Components, Corby, UK	494-124	

Software Axon pClamp	Molecular Devices, San José, CA, United States	Version 10.5	
Software IonWizard	IonOptix, Dublin, Ireland	Version 6.6.10.125	
Software MatLab2017	The MathWorks, Inc.		
Stage micrometer	Graticules Optics LTD, Tonbridge, UK	1 mm	
<b>Chemicals</b>			
Adenosine	Sigma-Aldrich, St. Louis, Missouri, United States	A9251-100G	
Bovine serum albumin	Sigma-Aldrich, St. Louis, Missouri, United States	A7030-50G	
CaCl <sub>2</sub>	Honeywell Fluka, Muskegon, MI, USA	21114-1L	
L-Carnitine hydrochloride	Sigma-Aldrich, St. Louis, Missouri, United States	C9500-25G	
Collagenase type 2, 315 U/mg	Worthington, Lakewood, NJ, USA	LS004177	
Creatine	Sigma-Aldrich, St. Louis, Missouri, United States	C0780-50G	
Cytosine-β-D-arabinofuranoside	Sigma-Aldrich, St. Louis, Missouri, United States	C1768-100MG	
EGTA	Carl Roth GmbH + Co. KG, Karlsruhe, Germany	3054.3	
Esketamine hydrochloride, Ketanest S 25 mg/mL	Pfizer Pharma PFE GmbH, Berlin, Germany	PZN-07829486	
Fetal Bovine Serum	Sigma-Aldrich, St. Louis, Missouri, United States	F9665	
Gentamycin 50 mg/mL	Gibco, Life Technologies, Waltham, MA, USA	15750-037	
Glucose	Sigma-Aldrich, St. Louis, Missouri, United States	G7021-1KG	
Heparin-Sodium, 5,000 IU/mL	Braun Melsungen AG, Melsungen, Germany	PZN-03029843	
HEPES	Sigma-Aldrich, St. Louis, Missouri, United States	H3375-1KG	
Insulin (bovine pancreas)	Sigma-Aldrich, St. Louis, Missouri, United States	I6634-50MG	
K-aspartate	Sigma-Aldrich, St. Louis, Missouri, United States	A6558-25G	
KCl	VWR International GmbH, Leuven, Belgium	26764.260	1 mg/mL
KOH	Honeywell Fluka, Muskegon, MI, USA	35113-1L	
Laminin from Engelbreth-Holm-Swarm murine sarcoma basement membrane	Sigma-Aldrich, St. Louis, Missouri, United States	L2020-1MG	
M199-Medium	Sigma-Aldrich, St. Louis, Missouri, United States	M4530	
Mg-ATP	Sigma-Aldrich, St. Louis, Missouri, United States	A9187-1G	
MgCl <sub>2</sub>	Sigma-Aldrich, St. Louis, Missouri, United States	63069-500ML	
NaCl	Fisher Scientific, Loughborough, Leics., UK	10428420	

NaCl-Solution 0.9%, Isotone Kochsalz-Lösung 0.9%	Braun Melsungen AG, Melsungen, Germany	3200950	
NaOH	AppliChem GmbH, Darmstadt, Germany	A6579	without Ca <sup>2+</sup> /Mg <sup>2+</sup>
Na-pyruvat	Sigma-Aldrich, St. Louis, Missouri, United States	P2256-100MG	
Phosphate Buffered Saline	Sigma-Aldrich, St. Louis, Missouri, United States	D1408-500ML	
Poly(2-hydroxyethyl methacrylate)	Sigma, Poole, UK	192066	
Protease XIV from Streptomyces griseus	Sigma-Aldrich, St. Louis, Missouri, United States	P5147-1G	
Taurine	Sigma-Aldrich, St. Louis, Missouri, United States	T0625-500G	
Thiopental Inresa 0.5 g	Inresa Arzneimittel GmbH, Freiburg, Germany	PZN-11852249	
Xylazine hydrochloride, Rompun 2%	Bayer Vital GmbH, Leverkusen, Germany	PZN-01320422	