

Materials List for:

Optical Mapping of Intra-Sarcoplasmic Reticulum Ca^{2+} and Transmembrane Potential in the Langendorff-perfused Rabbit Heart

Lianguo Wang¹, Nicole M. De Jesus², Crystal M. Ripplinger¹

¹Department of Pharmacology, University of California Davis

²Departments of Pharmacology and Biomedical Engineering, University of California Davis

Correspondence to: Crystal M. Ripplinger at cripplinger@ucdavis.edu

URL: <https://www.jove.com/video/53166>

DOI: [doi:10.3791/53166](https://doi.org/10.3791/53166)

Materials

Name	Company	Catalog Number	Comments
NaCl	Fisher Scientific	S271-1	Component of Tyrode's solution
CaCl_2 ($2\text{H}_2\text{O}$)	Fisher Scientific	C79-500	Component of Tyrode's solution
KCl	Fisher Scientific	S217-500	Component of Tyrode's solution
MgCl_2 ($6\text{H}_2\text{O}$)	Fisher Scientific	M33-500	Component of Tyrode's solution
NaH_2PO_4 (H_2O)	Fisher Scientific	S369-500	Component of Tyrode's solution
NaHCO_3	Fisher Scientific	S233-3	Component of Tyrode's solution
D-Glucose	Fisher Scientific	D16-1	Component of Tyrode's solution
95% O_2 5% CO_2	AirGas	carbogen	For oxygenation and pH of Tyrode's solution
Blebbistatin	Tocris Bioscience	1760	Excitation-contraction uncoupler
RH237	Biotium	61018	Voltage-sensitive dye
Fluo-5N AM	Invitrogen	F-26915	Low-affinity Ca^{2+} indicator; Alternative: Invitrogen F-14204; Loading must be performed at room temperature
Pluronic F127	Biotium	59004	For Ca^{2+} indicator loading; Warm until the solution is clear before use
Dimethyl sulphoxide (DMSO)	Sigma-Aldrich	D2650	For dissolving blebbistatin and dyes
Filter	EMD Millipore	NY1104700	11 μm in-line filter
Pressure Transducer	WPI	BLPR2	For measuring perfusion pressure
Transbridge Transducer Amplifier	WPI	SYS-TBM4M	For transducing/amplifying pressure signal; PowerLab may also be used with appropriate BioAmp
PowerLab 26T	ADInstruments		For continuous recording of pressure and ECG signals
THT Macroscope	SciMedia		Macroscopic optical setup. Details: 0.63X objective (NA = 0.31), 2X condensing objective, resultant field of view = 3.1 cm x 3.1 cm, depth of focus = ~ 1.5 mm
MiCam Ultima-L CMOS	SciMedia		Optical mapping cameras
Precision LED Spot Light	Mightex	PLS-0470-030-15-S	LED light source