

Materials List for:

Isolating Myofibrils from Skeletal Muscle Biopsies and Determining Contractile Function with a Nano-Newton Resolution Force Transducer

Martijn van de Locht¹, Josine M. de Winter¹, Dilson E. Rassier², Michiel H.B. Helmes^{1,3}, Coen A.C. Ottenheijm¹

¹Department of Physiology, Amsterdam UMC

²Department of Kinesiology and Physical Education, Faculty of Education, McGill University

³IONOptix BV

Correspondence to: Coen A.C. Ottenheijm at c.ottenheijm@amsterdamumc.nl

URL: <https://www.jove.com/video/61002>

DOI: [doi:10.3791/61002](https://doi.org/10.3791/61002)

Materials

Name	Company	Catalog Number	Comments
Bio Spec Products, Inc.	985370-XL	To isolate myofibrils	
Custom coded		Matlab	
Custom fabricated		Includes Labview program to control over serial connection; To control valves	
Custom fabricated		To cool the Peltier module	
Custom fabricated			
Custom fabricated		Aluminum tissue chamber	
Custom fabricated		To control the valves; Includes PC software to control over USB	
IonOptix		System controller software: data recording software with advanced signal generator for piezo and fast-step	
IonOptix	MCS100	To record sarcomere length	
IonOptix		Includes: Optiforce (interferometer), Micromanipulators, Signal interface, Piezo motor and controller. Based on the MyoStretcher	
IonOptix		Force probe	
Koolance	ADT-EX004S		
Koolance	EX2-755	To cool the Peltier module	
Microsoft		Data registration	
Olympus	IX71		
Olympus	TH4-200		
Sigma-Aldrich	529265	Poly(2-hydroxyethyl methacrylate); Coating for microscope slides to prevent sticking of tissue	
Sigma-Aldrich	78471	Crystals to dissolve in ethanol resulting in glue	
TE Technology, Inc.	TE-63-1.0-1.3	To cool the tissue flow chamber	
TE Technology, Inc.	TC-720	Includes PC software to control over USB	
Tecan Trading AG	20736652		
Tecan Trading AG	20739263	Syringe pump to induce backgroundflow together with fast-	

		step perfusion system; Outflow from tissue flow chamber	
Thermo scientific	2441081		
Warner Instruments (Harvard Bioscience, Inc.)	Discontinued	Alternative: SF-77CST/ VCS-77CSP	
Warner Instruments (Harvard Bioscience, Inc.)	TG150-4	To perfuse the tissue	
		1 PC for IonWizard and 1 PC for other software	