

Materials List for

Dosage-Adjusted Resistance Training in Mice with a Reduced Risk of Muscle Damage

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Citation

Begam, M., Narayan, N., Mankowski, D., Camaj, R., Murphy, N., Roseni, K., Pepin, M.E., Blackmer, J.M., Jones, T.I., Roche, J.A. Dosage-Adjusted Resistance Training in Mice with a Reduced Risk of Muscle Damage. *J. Vis. Exp.* (186), e64000, doi:10.3791/64000 (2022).

Date Published

August 31, 2022

DOI

10.3791/64000

URL

jove.com/video/64000

Materials

Name	Company	Catalog Number	Comments
AnMiao Star 608 Ceramic Ball Bearing	Anmiao Star (N/A)	AMS127	High precision, low friction wheel bearing. If make and model is not commercially available, an alternative version of a 608 low-friction wheel bearing, 8 mm bore diameter, 22 mm outside diameter, with silicon nitride ceramic balls in 420 stainless steel housing should suffice. Excess friction in the wheel bearing will adversely impact performance of the DART device and will increase overall resistance to muscle contractions.
Axio Scope.A1 microscope	Carl Zeiss (Peabody, MA)	Product #Axio Scope.A1	Light and fluorescence microscope
B6.A-Dysfprmd/GeneJ (a.k.a. BLAJ mice)	The Jackson Laboratory (Bar Harbor, ME). Special colony maintained by The Jain Foundation Inc. for collaborators who study dysferlin.	Stock #012767	Dysferlin deficient mice that model human limb girdle muscular dystrophy type 2B/R2.
Bipolar, transcutaneous, neuromuscular electrical stimulation (NMES) electrode	Harvard Apparatus, Holliston, MA	BS4 50–6824	Electrode for NMES. If this electrode is not commercially available, please contact corresponding author for alternatives.
Coplin Staining Dish	ThermoFisher (Waltham, MA)	Catalog No. S17495	Staining dish/jar for hematoxylin and eosin (H&E) staining of sections
Cura 4.4.1. Software	Ultimaker, Utrecht, Netherlands	Ultimaker Cura 4.4.1.	Slicing software to convert stereolithography files into G-CODE files
Deltaphase isothermal gel heating pad	Braintree Scientific (Braintree, MA)	Item #39DP	Heating pad to provide thermal support to animals while under anesthesia
Eosin Y	Millipore Sigma (Burlington, MA)	HT110132-1L	Pink cytoplasmic stain
Gorilla Super Glue	The Gorilla Glue Company (Cincinnati, OH)	Gorilla Super Glue Micro Precise	Cyanoacrylate adhesive to bond PLA components
Hematoxylin solution, Gill No.3	Millipore Sigma (Burlington, MA)	GHS332-1L	Dark blue stain for nuclei

HM525NX cryostat	ThermoFisher (Waltham, MA)	Catalog #HM525NX	Cryostat to make frozen sections of muscle
Lab Wipes. Kimberly-Clark Professional Kimtech Science Kimwipes Delicate Task Wipers, 1-Ply	ThermoFisher (Waltham, MA)	Catalog No. 06-666. Manufacturer #34120	Laboratory wipes to blot mineral oil from muscle tissue before snap freezing and for other purposes.
Labview 2014	National Instruments, Austin, Texas, USA	Labview 2014	Software for custom-written programs/routines that operate the dynamometer and trigger the NMES stimulator.
Liquid nitrogen HDPE Dewar Flasks	ThermoFisher (Waltham, MA)	S34074B. Thermo Scientific 41502000/EMD	Flask to hold liquid nitrogen for snap freezing muscle or other tissue
Magic depilatory cream	Softsheen Carson (New York, NY)	N/A	Razorless hair removal cream
Metal alligator clip	JINSHANGTOPK (web-based business)	24Pcs 51mm Metal Alligator Clip Spring Clamps	Spring clamp to hold tibial pin
Microscope slides	Globe Scientific (Mahwah, NJ)	1354W. Diamond White Glass Slides	Charged microscope slides
Mineral Oil	ThermoFisher (Waltham, MA)	BP26291	Mineral oil to cryoprotect muscle tissue before snap freezing
Monoprice Premium 3D Printer Filament PLA	Monoprice (Rancho Cucamonga, CA)	#11778	Premium 3D Printer Filament PLA 1.75mm 1 kg/spool, Gray. This is the material used to 3D print device components.
Monoprice Select Mini V2 3D printer	Monoprice (Rancho Cucamonga, CA)	Mini V2 3D	3D printer for computer-aided fabrication of device components.
NIH Image software	National Institutes of Health (NIH, Bethesda, MD)	NIH Image for Windows	Image processing and analysis software used to quantify area of muscle damage. NIH Image is also known as Image J.
Photoshop CS4	Adobe (San Jose, CA)	Creative Suite (CS4). 64 bit version for Windows	Image processing and analysis software used to generate tiled/stitched images of entire muscle cross-section from images of individual overlapping fields
PSIU6 stimulation isolation unit	Grass Instruments (West Warwick, RI)	PSIU6 isolation unit	Isolation unit for NMES. Stimulators, such as Model 4100 from A-M come with a built in stimulation isolation unit
Roboz 4-0 silk black braided suture material	Roboz Surgical (Gaithersburg, MD)	Roboz Surgical SUT152	Suture material to connect DART device footplate to dynamometer footplate or resistance for resistance training
S48 square pulse stimulator	Grass Instruments (West Warwick, RI)	S48 Stimulator	Laboratory electrical stimulator for NMES. If this stimulator is not commercially available, Model 4100 Isolated High Power Stimulator from A-M systems could be an alternative. Please contact co-author Jones for more information.
Scott's bluing reagent	Ricca Chemical Company (Arlington, TX)	6697-32	Bluing solution that intensifies hematoxylin nuclear staining
SigmaStat version 3.5	Systat Software (San Jose, CA)	SigmaStat version 3.5	Statistical software package for statistical analyses
Tabletop isoflurane vaporizer	VetEquip (Livermore, CA)	Item #901801	Inhaled tabletop anesthesia system
Triple antibiotic first aid ointment	Global Health Products (web-based business)	Globe Triple Antibiotic First Aid Ointment, 1 oz (2-Pack) First Aid Antibiotic Ointment	Antibiotic ointment applied on tibial pin as part of post-procedural care