

Intact *in vitro* Muscle Test System

1200A



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Performance.
Precision.
Progress.



aurorascientific.com/1200a

The industry leading, easy-to-use test system for measuring the mechanical properties of isolated muscle, bundles and strips.

The 1200A isolated muscle test systems are an industry leading solution for quantifying mechanical properties of isolated muscle. These systems are ideal for a number of limb muscles including the EDL, Soleus, diaphragm strips and smaller muscle samples in addition to artificial polymers or films.

The systems contain a stage apparatus for either mouse or rat, complete with a water-jacketed bath and oxygenating bubbler. In addition, they include our flagship dual-mode muscle lever system, high power stimulator, data acquisition hardware and system control and analysis software on a customized PC. Experimental setup, data collection and data analysis can all be done in a matter of minutes.

Parameters such as resting length, resting force, stimulation and the actual test protocol are all set using the control software. An extensive library of standard experimental protocols such as twitch, tetanus, fatigue, force-frequency, force-velocity, stiffness and work loops are also provided with the system.

The experimental setup apparatus is adjustable allowing the researcher to lower and raise the bath to attach and manipulate the muscle. In addition, force and length are measured at only one attachment point, minimizing setup time and boosting productivity. Choose the 1200A systems for performance, precision and progress.

System Components

300E/305E - Dual-Mode Muscle Lever System

605A - Complete Data Acquisition and Analysis System

701C - High-Power, Bi-Phasic Stimulator

800C - Mouse or Rat in vitro Muscle Apparatus

827A - Water Heater/Circulator

Features

Convenience of one test system capable of studying both mice and rats

Turn-key in vitro functionality in single or double channel configurations

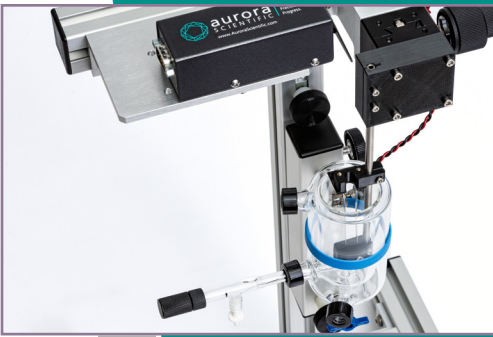
Industry leading resolution of isolated muscle measurements

Fast data acquisition and analysis software for Windows

Simple to assemble, operate, and expand as your measurement needs change

Capable of dynamic functional measures in addition to isometric

Range of peak forces from 0.5N to 10N



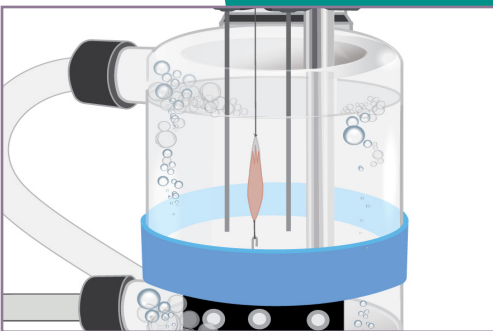
Go Beyond Isometric Measurements

Complete characterization of muscle function is achieved using our 300C series Dual Mode Muscle Levers; a force transducer and fast length motor in one. Isotonic, eccentric and force-velocity protocols are easily accomplished and supplement basic isometric twitch and tetanus measurements.

File	Start Cursor	End Cursor	I,2 RT	Integration	Total Time	Maximum	Time to Max	Minimum	Time to 0
100Hz_200ms_Tetanic_071210-seq_0_1.daf	0.207199	1.401199	0.001000	-0.000463	1.194000	1.585500	0.004000	-0.361500	0.012000
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100Hz_200ms_Tetanic_071210-seq_2_1.daf	0.181000	1.401199	0.001000	-0.003100	1.222100	1.585500	0.004000	-0.361500	0.374000
100Hz_200ms_Tetanic_071210-seq_3_1.daf	0.210000	1.395000	0.001000	-0.001435	1.183079	1.585500	0.141000	-0.361500	0.520000
100Hz_200ms_Tetanic_071210-seq_4_1.daf	0.206000	1.402000	0.001000	-0.010371	1.196000	1.585500	0.129000	-0.361500	0.324000
100Hz_200ms_Tetanic_071210-seq_5_1.daf	0.195199	1.421500	0.001000	-0.010555	1.200000	1.585500	0.066000	-0.361500	0.247000
100Hz_200ms_Tetanic_071210-seq_6_1.daf	0.190300	1.402000	0.001000	-0.009461	1.202000	1.585500	0.132000	-0.361500	0.339000
100Hz_200ms_Tetanic_071210-seq_7_1.daf	0.207000	1.398000	0.001000	-0.006766	1.191000	1.421500	0.114000	-0.361500	0.222000
100Hz_200ms_Tetanic_071210-seq_8_1.daf	0.196199	1.400199	0.001000	-0.010565	1.204000	1.585500	0.185000	-0.361500	0.305000
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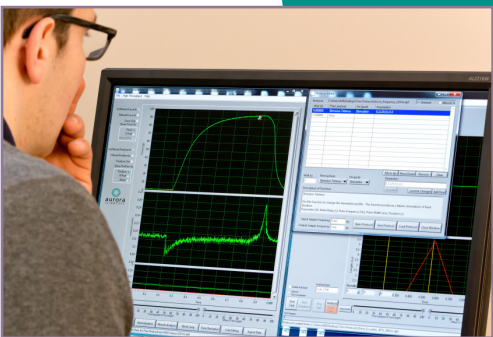
Lightning Fast Data Analysis

Experience high-throughput data analysis, including batch processing and multi-parameter calculations for hundreds of muscle samples within minutes. Downstream analysis can be completed within Aurora Scientific DMA/DMC software or exported to your analysis program of choice.



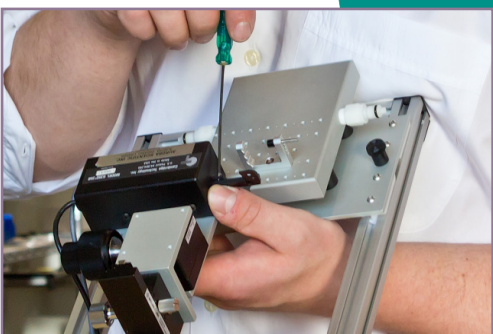
Precise and Robust Components

We pride ourselves on a long history of supplying some of the most accurate transducers and muscle physiology components for life science research. More importantly, our legacy systems dating back more than 30 years speak for themselves – we make quality products that last.



Standard Protocol Library

The protocol library includes a variety of muscle experiments for whole animal studies. Protocols include system operation and data acquisition settings optimized for sample type and measurement needs. Add your own custom protocols as well to streamline system operation with multiple lab members.



Friendly and Reliable Support

We stand by our products and by our customers. We can provide complete onsite installation, full service training and detailed instruction regarding software controls. As your partner in research we do all we can to ensure your studies stay on track and deliver the data you need.



Select Publications

Verapamil mitigates chloride and calcium bi-channelopathy in a myotonic dystrophy mouse model.

Cisco, Lily A. J Clin Invest. (2024) 134.1:e173576. PMID: 38165038

Improved health by combining dietary restriction and promoting muscle growth in DNA repair-deficient progeroid mice.

Vermeij, Wilbert P J et al. Cachexia Sarcopenia Muscle. (2024) PMID: 39245994

Senolytic treatment does not mitigate oxidative stress-induced muscle atrophy but improves muscle force generation in CuZn superoxide dismutase knockout mice.

Borowik, Agnieszka K., et al. GeroScience. (2024) 46.3:3219-3233. PMID: 38233728

Potentiation of force by extracellular potassium is not dependent on muscle length in mouse EDL muscle.

Angelidis A, et al. Am J Physiol Cell Physiol. (2024) 326.2:C529-539. PMID: 38145294

Neuronal deletion of MnSOD in mice leads to demyelination, inflammation and progressive paralysis that mimics phenotypes associated with progressive multiple sclerosis.

Bhaskaran, Shylesh et al. Redox Biol. (2023)59:102550. PMID: 36470129

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