



# 1301A Isometric Whole Animal System for Mice

The all-new 1301A Isometric Whole Animal System enables simple, high-throughput, isometric only footplate experiments to accurately measure in-vivo muscle function in mice.



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# The Isometric Whole Animal System provides flexible and accurate measurement of rodent muscle properties in-vivo.

The 1301A is a high performing and precise test system, giving researchers a simple method to longitudinally measure isometric mechanical properties of muscle in-vivo. Utilizing our 490A torque transducer, researchers have an excellent choice for basic isometric measurements such as twitch, tetanus, force-frequency and fatigue where throughput or lowering costs is a major consideration. Each torque transducer model is capable of measuring applied torque in both clockwise and counterclockwise directions enabling measurements of antagonistic muscle groups across the joints of mice. The torque sensor heads are exceptionally durable, yet still offer the same low compliance and sensitivity as our motorized 300 series.

The system comes with a mouse apparatus, complete with temperature-controlled animal and limb plates designed to support and fix the animal and limb being tested. This system also includes our high-power, bi-phasic stimulator and all required electrodes for subcutaneous muscle and/or nerve stimulation.

Control and analysis software comes preloaded on a custom PC, making the process of experimental setup, data collection and data analysis consistent and reliable. With our control and analysis software (DMC/DMA), parameters such as resting force, stimulation and common mechanics experiments are set and ready to use.

## System Components

**490A** - Torque Transducer with Footplate

**605A** - Complete Data Acquisition and Analysis System

**701C** - High-Power, Bi-Phasic Stimulator

**809C** - Mouse in-vivo Apparatus

## Features

High experimental throughput

Designed for basic isometric protocols

Ideal for live animal protocols, enabling longitudinal analysis

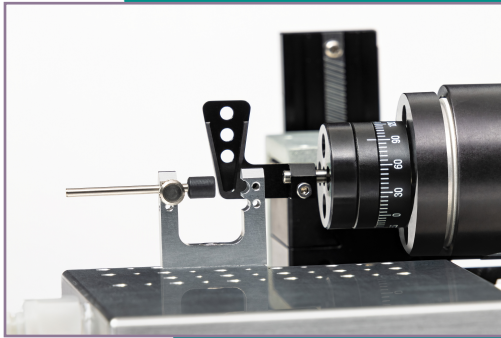
Bi-directional torque measurement

Exceptionally durable, with low compliance and sensitivity

Fast data acquisition and analysis software for Windows operating systems

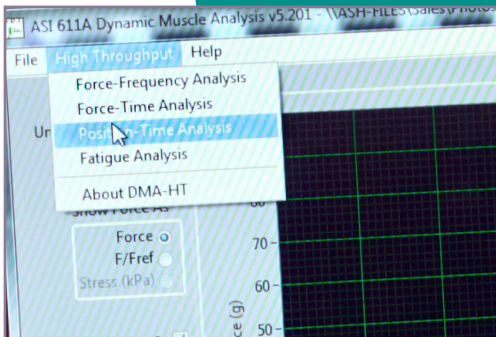
Dual purpose field/nerve stimulator

Turn-key functionality



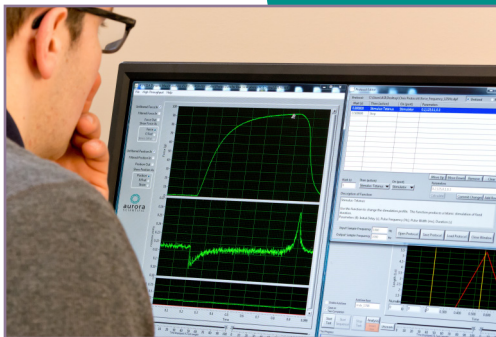
## Survivable Measurement of Muscle Function

The isometric in-vivo system allows researchers to assess antagonistic muscle groups of the hindlimb and provide a convenient platform for longitudinal analysis, compound screening, phenotype evaluation, and comparison of murine models.



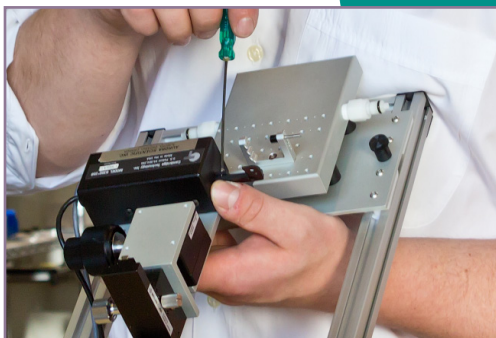
## High Throughput Software Capability

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.



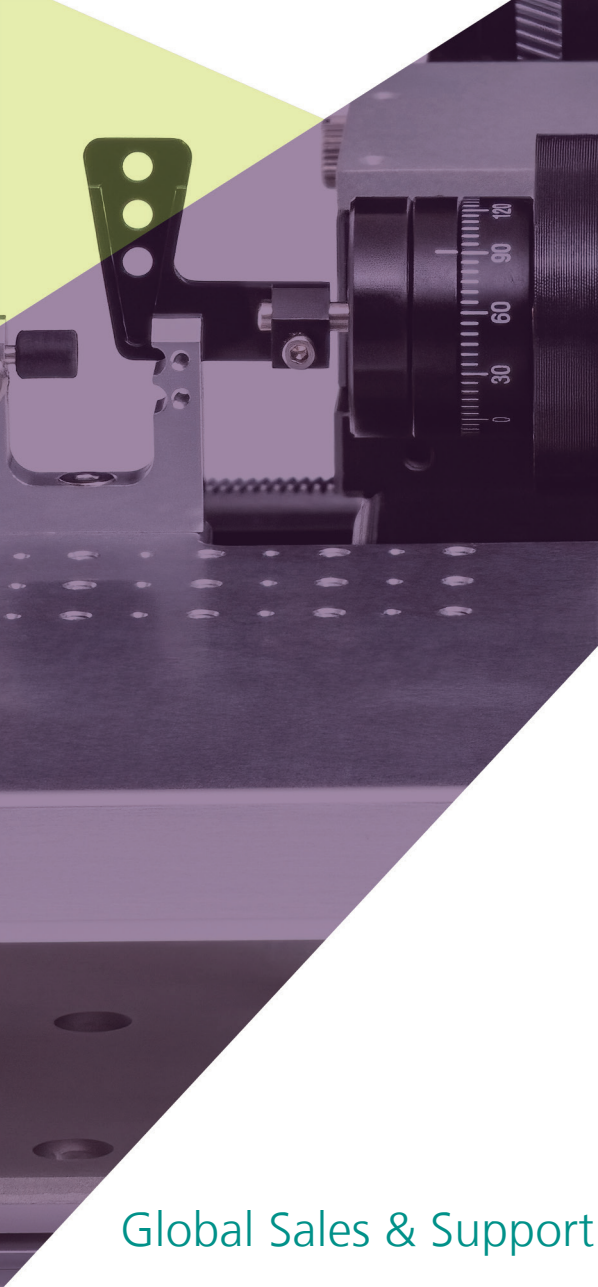
## Standard Protocol Library

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

Minced muscle autografting improves bone healing but not muscle function in a porcine composite injury model.

McKinley, Todd et al. J Orthop Res. (2023) 41.9:1890-1901. PMID: 36924069

In Vivo Measurement of Hindlimb Dorsiflexor Isometric Torque from Pig.

Coronaa, Benjamin et al. JoVe (2021) 175. PMID: 34542541

Inflammatory and Physiological Consequences of Debridement of Fibrous Tissue after Volumetric Muscle Loss Injury.

Coronaa, Benjamin et al. Clin Transl Sci (2018) 11:208-217. PMID: 29193769

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