



SA102 RotaRod for Rats and Mice

SA102 RotaRod

1. Pictures



For both Rats and Mice



For Mice (6 lanes)

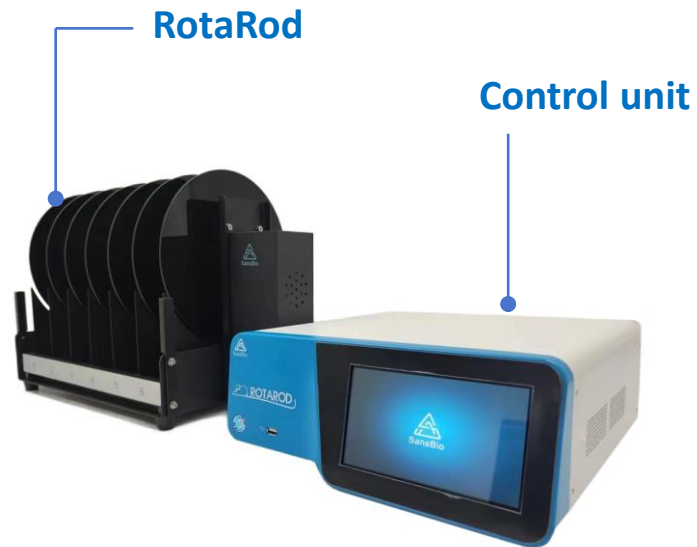


For Rats (4 lanes)

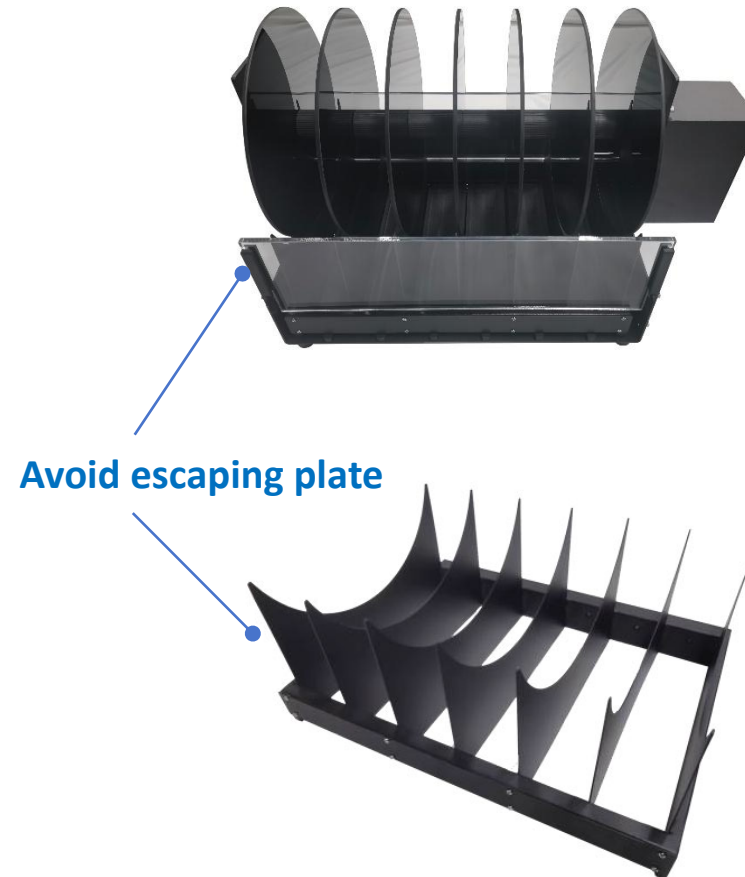


SA102 RotaRod

1. Pictures



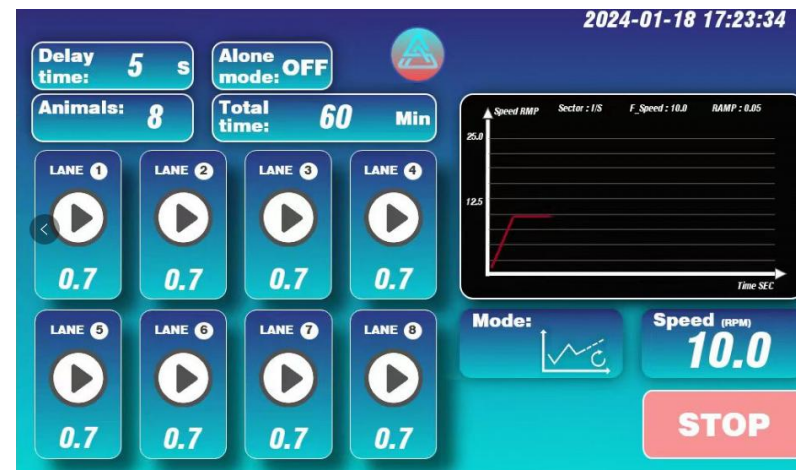
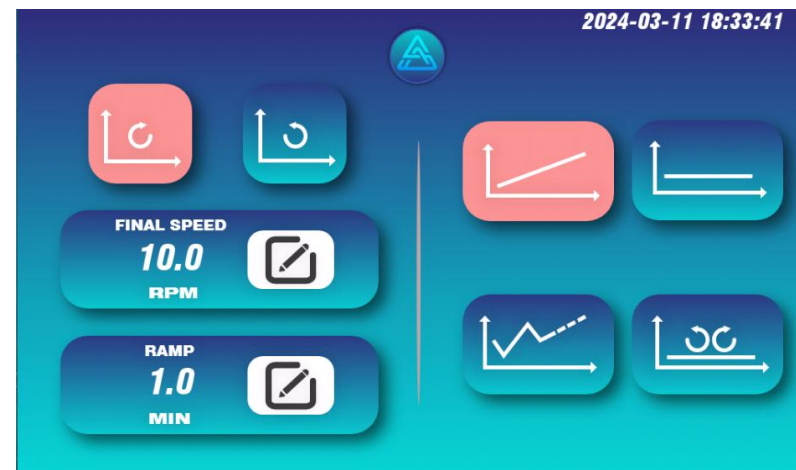
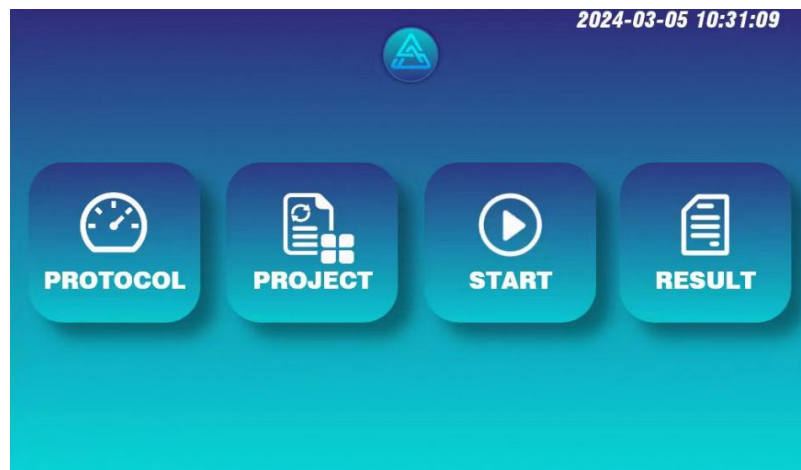
For Mice (6 lanes)



SA102 RotaRod

2. Software

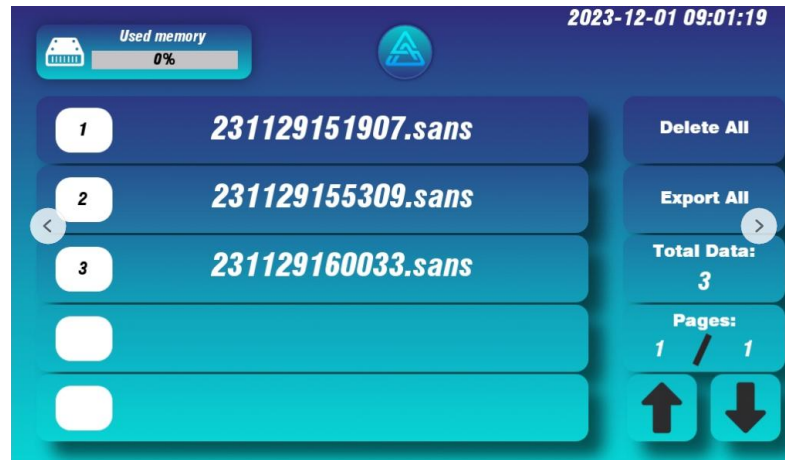
User Interface



SA102 RotaRod

2. Software

User Operation Interface



■ Application

The RotaRod is mainly used for motor coordination, balance testing, anti-fatigue drug screening and identification testing, acted as the effective tool to assess motor performance in rodents using the natural fear of falling as motivation.

■ Principle

Motor coordination and fatigue can be assessed by measuring the duration the animal stays on the rotating rod before falling. This method is widely used in screening and identification of anti-fatigue drugs, and also serves as a phenotypic analysis tool. Drugs (such as benzodiazepines) or certain phenotypes affect neuromuscular coordination, which in turn changes the time the mouse or rat stays on the rod.

■ Background

The rotarod test was invented by Dunham and Miya in 1957. It has evolved from a simple rotating bar to multi-mode, programmable systems; from numeric LED displays to PC software control and now to touch screen operation; from single-channel to multi-channel designs; and from manual recording to fully automated data acquisition. Our SA102 Series Rotarod adopts the most advanced technologies to achieve a most comprehensive solution of rotarod experiment.

SA102 RotaRod

3.Introduction

■ Features & Benefits

Features	Benefits
Controller and Rotarod frame separately	Cost-saving, switch flexible
7 " capacitive IPS LCD touch screen, resolution 1024*600.	Big touch screen to be very easy to get the experiment data and good sensitivity in touch.
Control unit and USB key saving	No need to connect to PC.
Constant, uniform acceleration, reverse ramp, custom ramp and rocking	ADAPTS to almost all coordination behavior and motor function experiments.
Precision IR Sensor	More accurate and sensitive for the detection.
8 protocol configurations can be set in the experiment.	Can directly call the internal save experiment protocol, without setting up each experiment every time.
Speed range 0.05-100 RPMs, Step 0.1RPM	Be applicable for higher intensity test and more accuracy with 0.1RPM resolution.
Alone Mode	Ensure the consistency of experimental data in each lane.
Automatic conversion of data into CSV files for the USB stick	Possibility to open files in Excel
>2000 data save	Large memory storage

SA102 RotaRod

3.Introduction

Output Data

- Time on rod (automatically accumulated fall duration)
- Drop speed
- Acceleration speed in falling
- Initial speed
- Final speed
- Ramp
- Travel distance (m)
- Mode: Constant, uniform acceleration, reverse ramp, rocking
- Animal information (ID, age, weight, gender, etc.)
- Experiment details including segmented mode parameters



SA102 RotaRod

4.Specification

■ Basic Information

Application	6 mice or 4 rats
Commands	7 " capacitive IPS LCD touch screen
Power	100-240 VAC, 50-60Hz
Sound level	< 60 dB (A)

■ Rotarod Size

	Mice (SA102M)	Rats (SA102R)	Larger Rats (SA102L)
Lanes	6 lanes	4 lanes	3 lanes
Rod Diameter	30mm	60mm	90mm
Rod Width	56mm	86mm	120mm
Fall Height	200mm	300mm	300mm
size	51×28×35cm (L x W x H)	51×28×57mm (L x W x H)	51×28×57mm (L x W x H)
Weight	11kg	14kg	14kg
Controller size	27×30×13cm (L x W x H)		
Controller weight	6kg		

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4.Specification

■ Operation

Mode	Constant, uniform acceleration, reverse ramp, rocking
Speed	Speed range 0.05-100 RPMs, Step 0.1RPM
Start/Stop	From the touch screen, TTL signal control
Detection	Precision IR Sensor
Revolution	Clockwise, anti clockwise
Test time	1~9999min
Protocol	8 protocol configurations can be set in the experiment.
Projects	8 projects to be saved 1~8 animals, includes animal ID, age, weight, gender and note.
Initial test	4rpm is initiated in start on to avoid the reverse and help the animal well get in the experiment
Fall time threshold	0~100s
Output	Latency, Initial speed, Final speed, ACC speed, Drop speed, Revolution, Ramp, Rotating mode.
Data export	By USB flash drive
Data storage	> 2000 data



SA102 RoraRod

5. Reference (some)



The University of Hong Kong



Seoul National University



South Medical University



Shanghai University



Hangzhou Normal University



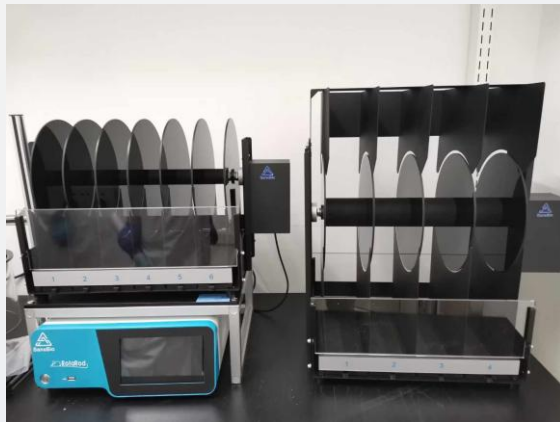
Yongming University in Taiwan



SA102 RotaRod

5. Reference (some)

Haerbin Medical
University



SA102 RotaRod

5. Reference (some)

Seoul National
University



Many many labs in Korea using our RotaRod.



SA102 RotaRod

5. Reference (some)

Paper



- [1] Elimination of senescent cells by β -galactosidase-targeted prodrug attenuates inflammation and restores physical function in aged mice
- [2] Dysfunction of Akt/FoxO3a/Atg7 regulatory loop magnifies obesity-regulated muscular mass decline
- [3] LRRK2 G2019S promotes astrocytic inflammation induced by oligomeric α -synuclein through NF- κ B pathway
- [4] LRRK2 Deficiency Aggravates Sleep Deprivation-Induced Cognitive Loss by Perturbing Synaptic Pruning in Mice
- [5] 6-Gingerol Alleviates Neonatal Hypoxic-Ischemic Cerebral and White Matter Injury and Contributes to Functional Recovery
- [6] Astilbin attenuates neonatal postnatal immune activation-induced long-lasting cognitive impairment in adult mice



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5. Reference (some)

University of Toronto	Canada
Michigan State University	USA
University of New Mexico	USA
Autonomous University of Madrid	Spain
Universidad Complutense de Madrid	Spain
Aydin Adnan Menderes University	Turkey
University of Barcelona	Spain
Seoul National University	Korea
Institute of Basic Science	Korea
Pusan National University	Korea
Gwangju Institute of Science and Technology	Korea
Ehime University School of Medicine	Japan
Kaohsiung Veterans General Hospital	Taiwan
Taichung Veterans General Hospital	Taiwan
Fu Jen Catholic University	Taiwan
Academia Sinica	Taiwan
Taiwan University	Taiwan
City University of Hong Kong, Department of Neuroscience	Hong Kong
Chinese University of Hong Kong, School of Life Science	Hong Kong
University of Macau	Macau
Macau University of Science & Technology	Macau
National University of Singapore	Singapore
Universidad de Chile	Chile

Many many reference...

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6. Video

