Rotarod (Acceleration Mode)

TO EVALUATE DRUG EFFECTS ON MOTOR COORDINATION, BALANCE AND MOTOR LEARNING IN RODENTS

Rotarod test is widely used to evaluate the effect of drug on motor coordination, balance and motor learning in rodents. The principle of this test is that rats or mice are first trained to walk on a rod rotating at a certain speed. Once the animals have learned this, the effect of a test-compound on their motor performance is evaluated. Animals experiencing impaired motor coordination are unable to cope with the rotating rod and will drop off when the rotation speed exceeds their motor coordination capacity. When the animal drops from rod safely into its own lane, the time latency to fall is automatically recorded.

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Designed To Study The Effect Of Drug On Motor Coordination, Balance And Motor Learning In Rodents.

🇺🇸 English	🇷🇺 Russian	🇯🇵 Japanese
🇮🇹 Italian	🇫🇷 French	🇩🇪 German
🇹🇭 Thai	🇨🇳 Chinese	🇰🇷 Korean

Multi-Language Touch Screen Display

FEATURES:

- Same instrument can be used for mice as well as rat just by changing the rotor
- Five compartment model
- Six modes of operation (Normal /Acceleration 1/ Acceleration 2/ Reverse Acceleration/ Multistep/ Rocking)
- Animal selection facility (Mice/Rat)
- Forward & reverse direction of rotation
- Facility of compartment coding (001 to 999)
- Individual lane timers (0-999.9sec) with resolution of 0.1s
- Precise data of falling time, falling speed and distance travelled

- Electronic rod speed adjustment- constant speed (0.1 to 80.0 rpm)
- Password-protected software and admin features
- Software for data collection and report generation
- Calibration report generation facility in the software
- Graphical presentation of data
- Provision to add animal ID, weight, substance, dose, user name, experiment Title & comment in the software
- Data can be converted to excel & Pdf file for further analysis

NORMAL MODE
Fixed speed selectable from 0.1 to 80rpm can be set.

ACCELERATION MODE I
User can set the speed to be achieved in selected acceleration time starting from 0 rpm. For example, if user sets End speed as 40 and acceleration time as 60 sec then, rotor will start from 0 rpm; individual lane timers will also start same time and rotor will reach 40 rpm speed in 60 seconds. Once rotor achieves 40 rpm, it will continue at 40 rpm up to the cutoff time.

ACCELERATION MODE II
User can set the speed to be achieved in selected acceleration time starting from 0 rpm. Lane timers will start at the time when rotor achieves the speed of 1/10th of the End Speed. As the animal falls, time measurement of the corresponding lane will stop.

For example, if user sets End Speed as 40 and acceleration time as 60 sec then, rotor will start from 0 rpm and will achieve 1/10th of End speed as 4rpm. Rotor will keep rotating at 4rpm and as user selects Start key, individual lane timers will start and rotor will reach 40 rpm speed in 60 seconds. Once rotor achieves 40 rpm, it will continue at 40 rpm up to the cutoff time.

REVERSE ACCELERATION MODE
In Reverse Acceleration Mode the rotor will start rotating from start rpm and will achieve the end rpm in given ramp time with selected direction of rotor. After rotor achieves the end rpm it again starts decreasing towards start rpm and reach start rpm in same ramp time interval. Then it wait for 1 sec and again reach to end rpm in same ramp time interval in reverse direction. After rotor achieves end rpm it again starts decreasing towards start rpm and reach start rpm in same ramp time interval.

MULTISTEP MODE
In multistep mode, user can Set the 5 different RPMs and Ramp time and the system will rotate at selected rpm w.r.t to individual Ramp time.

ROCKING MODE
In this mode rotor rotates in forward direction with no. of selected revolution with set speed and again the rotor rotates in reverse direction with no. of selected revolution with set speed and continue till cutoff time.

Mode	Parameter			
	Speed	Acceleration Time	Cut Off Time	Parameters recorded
Normal	0.1-80rpm (selectable fixed)	N.A.	1 sec to 9999 sec	Experiment no, Date, Time, Test number, Animal ID, Mode, Cutoff Time, Falling Speed, Time Spent on rotor, Distance Travelled
Acceleration I	1 to 80 rpm	60 sec to 300 sec	301 sec to 9999 sec	Experiment no., Date, Time, Test number, Mode, Animal ID, Acceleration Time, Cutoff Time, Falling Speed, Time Spent on rotor, Distance Travelled.
Acceleration II	10 to 80 rpm	60 sec to 300 sec	301 sec to 9999 sec	Experiment no., Date, Time, Test number, Mode, Animal ID, Acceleration Time, Cutoff Time, Falling Speed, Time Spent on rotor, Distance Travelled.
Reverse Acceleration	Start RPM: 1 to 10 rpm End RPM: 11 to 80 rpm	30 sec to 300 sec	301 sec to 9999 sec	Experiment no., Date, Time, Test number, Animal ID, Mode, Start speed, End speed, Acceleration Time, Cutoff Time, Falling Speed, Time Spent on rotor, Distance Travelled.
Multimode	1 to 80 rpm	1 sec to 300 sec	301 sec to 9999 sec	Experiment no., Date, Time, Test number, Animal ID, Mode, speed, No. of steps, Acceleration Time, Cutoff Time, Falling Speed, Time Spent on rotor, Distance Travelled.
Rocking	1 to 40 rpm Revolution : 4 to 40	N.A.	60 sec to 9999 sec	Experiment no., Date, Time, Test number, Animal ID, Mode, Speed, No. of Revolution, Cutoff Time, Falling Speed, Time Spent on rotor, Distance Travelled.

SOFTWARE REPORT FORMATS :
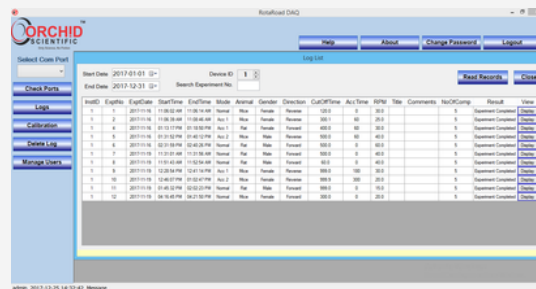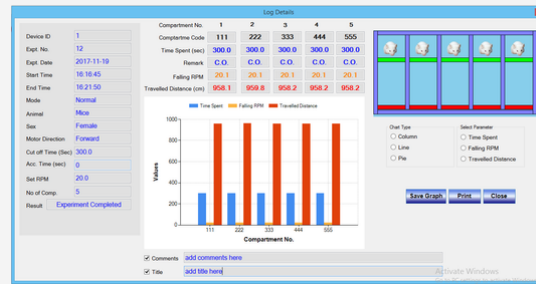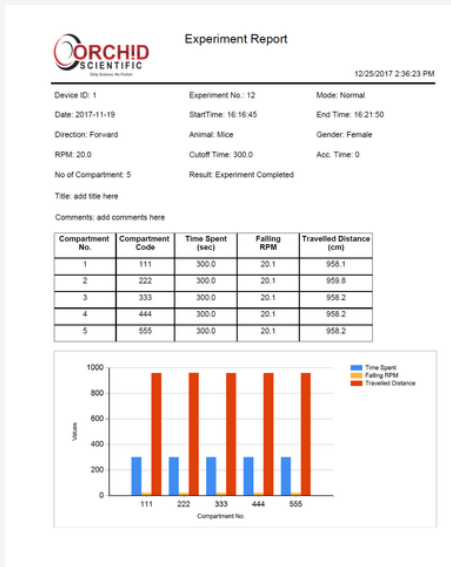
SYSTEM SPECIFICATION AND MODELS:

Specifications	Model			
	RR02-M	**RR02-R**	**RR02**	**RR02-IR**
Animal	**Mouse**	**Rat**	**Mouse & Rat**	**Mouse & Rat**
Number of lanes	**5**	**4**	**5**	**5**
Rotor Speed Accuracy	±1.0 rpm			
Rotor Speed Resolution	0.1 rpm			
Falling Time	0-999.9sec (resolution 0.1sec)			
Distance Travelled	0.1 cm to 99999.9 cm			
Rotor Diameter	30 mm	60 mm	Mouse: 30 mm Rat: 60 mm	Mouse: 30 mm Rat: 60 mm
Lane Width	57 mm	87 mm	Mouse: 50 mm Rat: 76mm	Mouse: 50 mm Rat: 76mm
Falling Height	180mm	320mm	Mouse: 225mm Rat: 240mm	Mouse: 225mm Rat: 240mm
Lane Separator Diameter	250mm	310mm	290mm	290mm
Fall Detection Sensor	Plate type	Plate type	Plate type	Infra Red
Overall Dimension (LxWxH)	580mm X 300mm X 465mm	580mm X 310mm X 510mm	580mm X 300mm X 520mm	580mm X 300mm X 520mm
Display	4.3 inches TFT, Touch screen			
Material of Construction	Acrylic			
Power requirements	220/230V AC 50Hz, 110/120 V AC 50-60Hz*			
PC Connectivity	Ethernet Cable			

*Needs to be specified in order information

ORDERING INFORMATION:

Model	Accessories
RR 02	• Basic instrument-1 • Mice/Rat rotor as per model selected • Tools for assembling • Software for data transfer • Ethernet Cable

Note: Orchid's continuing product development makes specifications subject to change without prior notification.

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