

SOP No: AHT 21

SUBJECT: Rotarod test for rodents (April 2015)

REASON FOR USE: This is a behavioural test designed to determine brain function

POLICY: This technique may only be performed by operators skilled in the technique.
The rotarod test is used for measuring coordination and balance in mice and rats.

PRECAUTIONS:

EQUIPMENT: An elevated horizontal rod divided into several sections with walls: the rod can rotate with constant or accelerating speed. Several animals (up to 5) can be tested simultaneously depending on the number of sections. Some rotarods are equipped with a mechanism for automatic detection of the fall latency.

PROCEDURE:

1. Bring animals into room (with lighting levels as will be used in the experiment and doors shut) at least 30 mins before beginning experiment.
2. Drugs/compounds should be given at appropriate absorption times prior to introducing rats/mice to the apparatus
3. Prepare the trial. Set parameters according to the protocol: accelerated or constant speed, min and max acceleration speed (e.g. 4 rpm to 40 rpm) and acceleration period (e.g. 5min)). At the end of each trial, the rotarod is cleaned with 70% alcohol solution, and dried with paper towelling. If it has panels for an automated detection of the fall, ensure they are in the "Ready" position.
4. Start the slow baseline rotation of the Rotarod. Pick up the animal by its tail and quickly place it on the rod facing against the rotation direction. Ensure that it grips the rod. Repeat with the next animal placing the animals as quickly and as consistently as possible. After all of the animals that will run in the one cohort are placed on the rod, start the acceleration program and timer. It is advisable to run only 2-3 animals at a time to minimize the time that animals spend on

- the rod before the start of the trial. Move away from the apparatus and quietly observe until the animals fall from the rod or the trial time elapses. When the first animal falls, note the time but do not interfere with the experiment.
5. After all animals fall from the rod or the trial time has elapsed, stop acceleration of the rod, return the animals to the home cage, record fall latencies and thoroughly clean the Rotarod with 70% ethanol solution paying particular attention to removing all urine/faecal residues and allow to dry. Return all detection panels/timers to "Ready" position. Repeat steps 4-5 with the next cohort.
 6. Typically, each animal is subjected to several trials/day (e.g. 4 trials) separated by the rest time in the home cage (e.g. 15min inter-trial interval). Depending on the experiment, the Rotarod test could be run once or repeated over several days to assess motor learning.

Assessment:

Latency to fall off drum in both the training and testing trials. Usually fall latencies of the day are averaged and this average latency serves as a performance measure. This latency should be reported in the context of the protocol conditions – min and max acceleration speed and acceleration period.

RECOMMENDATIONS:

1. Select comfortable moderate lighting conditions for the test and keep them consistent between interconnected 3 experiments, as well as time of the day when experiments are conducted.
2. Try to minimise interfering during the trial. Do not produce sudden movements and avoid noises.
3. Run all manual scoring in a "blind" manner.

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CHAIR OF UAEC

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