

SOP No: AHT 13

SUBJECT: Tail Suspension Test – Mice (September 2015)

REASON FOR USE: This is used as one of the models of depression and to screen novel antidepressants or depression-inducing treatments/procedures. The TST is often considered as an alternative to the Forced Swim Test.

POLICY: This technique may only be performed by operators skilled in the technique.

PRECAUTIONS:

EQUIPMENT: To conduct the test, a simple setup of hooks is suspended from a bar approx. 30cm above the bench top. If scoring will be performed manually, two animals can be scored at the same time, separated by the screen to prevent animals from seeing each other. It is recommended that sessions be video-recorded using a recording system. Scoring may be automated using a tracking program (e.g. Ethovision) in which case up to 4 animals can be run at the same time, separated by screens. Usually dim lighting selected in the room.

PROCEDURE:

1. Adjust light in the experimental room according to the experimental protocol. Bring the animals into the room and allow to acclimate for approx. 30-60min before the experiment.
2. Prepare for digital recording. If Noldus Ethovision or other automatic tracking program is to be used, set up all necessary parameters and check successful tracking settings.
3. If pharmaceutical intervention is required, administer required substances according to the AEC approved experimental protocol.
4. Prepare the trial. Prepare the recording program and mice identification. Wrap adhesive tape around the animal's tail in a constant position three-quarters of the distance from the base of the tail. Start the recording: suspend the animals on the suspension hook through the adhesive tape as close as possible to the tail (1-2mm) to ensure the animal hangs with its tail in a straight line. If several mice are observed at the

same time, ensure that they cannot see each other by using screens.

5. Trial usually lasts 6min. In this time the animal first makes active attempts to escape but quickly adopts an immobile posture.
6. At the end of the trial, carefully remove animals from the hooks and remove the tape before returning animals to their home cage. Clean the area under the hook. Repeat steps with the next cohort.

Assessment:

Main measure in the Tail Suspension Test is the total time spent immobile over the 6 min observation period. In addition to the latency of the first bout of immobility (the bout is defined as a period of at least 1 sec without any active escape behaviour) can be recorded. Some animals may try to escape by climbing their tail; such animals need to be removed from the study and replaced.

RECOMMENDATIONS:

1. Carefully select lighting conditions suitable for the particular research purpose.
2. After the lighting conditions are selected, record them and keep them consistent between inter-connected experiments as well as time of the day when experiments are conducted.
3. If automated animal tracking is employed, take particular care in setting up subject detection and tracking. Run test tracking before adopting conditions for the main recordings.
4. Do not interfere with the trial. Retreat behind the curtain and observe on the screen; avoid noise.
5. Run all manual scoring in a blind manner. Behavioural scoring requires practice; scoring by two independent observers might improve detection.

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REVISED:



CHAIR OF AEC

REFERENCES

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