

## SANGER INSTITUTE STANDARD OPERATING PROCEDURE

**SUBJECT: Hotplate – V1**

<b>SOP Number: SOP0058</b>	<b>To be reviewed:</b>	
<b>Author(s):</b>	Signed:	Date:
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<b>Date modified:</b>		

**INTRODUCTION:**

The purpose of this procedure is to assess the pain threshold to a contact non damaging thermal stimulus.

**HEALTH & SAFETY:**

- **RA003** – Hazardous Substances; *Section RA003.2*
- **RA004** – Physical Hazards; *Sections RA004.1.4, RA004.2, RA004.6*

**RESPONSIBILITIES:**

All staff performing this procedure are responsible for ensuring that this SOP has been read, understood and where applicable is followed in accordance with the relevant PPL. All staff should be trained and competent to perform the procedure, where applicable they should also be licensed to perform the procedure.

**RESOURCES:**

**Equipment:**

1. Weight scale
2. 70% Ethanol and tissues
3. Techniplast mobile IVC rack
4. Techniplast mobile transport rack
5. One clean cage and nestlet per cage of mice tested and requiring cage clean
6. Diet (as defined by pipeline)
7. Hot plate #2 (TSE-Systems)/ Hot plate #1 (TSE-systems)+Countdown Timer
8. Foot pedal
9. Clear Perspex cylinder
10. Flat based thermometer
11. Lux meter

**Associated Documents & SOPs:**

- **SOP0045** – Weigh Mice
- **SOP0064** – Use of Change Station

**Staff Required:** This test should be performed by 2 phenotypers.

**NOTE:**

This test should be performed in a change station, with both sides open so all sides of the viewing jar can be monitored and should be preceded with 15 mins acclimatisation to the test area.

This SOP details the use of Hotplate #2. If this becomes faulty Hotplate #1 can be used, this model does not allow the setting of a '*Run Time*' and requires the use of an additional countdown timer to indicate the time out point.

**PROCEDURE:**

**Before performing the procedure, verify that this is the correct procedure at this point in the pipeline by consulting the cage card(s) and confirming that the procedure has not already been performed on the mice.**

1. Collect scheduled mice from the animal room and transport to the holding equipment in the test area.
2. Prepare change station for use (see SOP Use of the Techniplast Interactive Cage Change Station).
3. Within the change station, switch the hot plate on via the butterfly switch at the rear. Following the 'on screen' instructions set; '*Run Time*' to 30 seconds and '*Set Temp*' to 52°C and allow to warm up.
4. When the hot plate has reached the required temperature, place the flat thermometer in the centre of the plate and check that it is reading 52°C ± 1°C. If it does, continue with the procedure. If it doesn't, allow the plate another 10 mins to come to the correct temperature and repeat. If the second QC attempt fails, inform the management team and switch to the backup hot plate (#1).
5. Use the Lux meter to measure the light level at the centre of the plate. (Do not place the sensor on the hot surface!)
6. Prepare scales for use.
7. Clean the clear Perspex cylinder with 70% ethanol and place on the hot plate.
8. Identify mouse to be tested by ear mark. Release mouse onto the hot plate and simultaneously depress the foot pedal. View the screen briefly to ensure the timer has started.
9. Two people observe the mouse until one of the end points is observed according to the current DCF (including reaching 30sec time limit without reaction). When an end point is reached, simultaneously remove the mouse from the hot plate and release the foot pedal, noting the temperature and latency to respond as displayed on the hot plate screen, and if mouse stood in urine.
10. Weigh mouse (see SOP Weigh Mice).
11. Record results according to current DCF.

12. Return the mouse to its home cage.
13. Wipe any urine or faeces off the plate with 70% ethanol.
14. Repeat (steps 8-13) for all mice to be tested and perform a cage clean as defined by pipeline.
15. Clean equipment and surfaces. Transfer all waste to a yellow offensive waste bag or clearly labelled waste container.
16. Ensure all cages display updated cage cards and return mice to animal room. Place a **'POST PROCEDURE CHECK REQUIRED'** label on each cage returned.