

## **Muromachi Microwave Fixation System**

### **I. Objective**

Use of the Microwave Fixation System is to euthanize conscious mice while fixing the brain tissue.

### **II. Comments and Recommendations**

- This procedure has been written with specific reference to the Integrated Physiology Facility (IPF), the Microwave Fixation System may only be used at this facility by IPF approved experienced operators (Custodian: Karin Borges)
- Use of the Muromachi Microwave Fixation System and any variation to this SOP must be described in a relevant animal ethics application
- Users should read and understand the associated Risk Assessment prior to operation: 12417 Use of Muromachi Microwave Fixation System, 3657 UQBR Handling and restraint of laboratory animals; 3940 Handling rats and mice (available on the [UQSafe](#) website)
- Equipment/software failures and animal escapes need to be reported to the animal facility manager immediately
- All incidents/injuries should be reported via [UQSafe](#) online
- Spills must be cleaned up immediately
- Use of the Microwave Fixation System involves mouse handling and appropriate care should be taken, refer to [LAB\\_006 Handling and restraint in mice and neonates](#), and [LAB\\_039 Handling and Restraint in Rats and Neonates](#)
- Wild type and genetically modified animals must be transported to equipment as per OGTR guidelines and [LAB\\_003 Transportation of Laboratory Rodents](#)
- The IPF is a shared space with unknown commensal microbial status. Once transported to a shared space it is often not possible, for biosecurity reasons, to return rodents to their original animal facility. Arrangements for transportation and ongoing care of experimental animals must be made with relevant animal facility managers when planning projects that aim to use a shared facility

### **III. Equipment**

- Minimum Personal Protective Equipment (PPE) consists of gloves, gown, closed in shoes, eye protection and face mask. Additional PPE may be required based on added risk e.g., working with infectious animals (P2 fitted mask and viral gown)
- Muromachi mouse restraint
- Disinfectant (1-2% Virkon), Ethanol (70%)

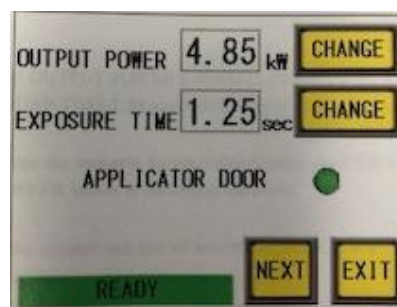
### **IV. Preparation**

- Check booking date/s and time/s on PPMS
- All animal arrivals/departures and euthanasia's must be recorded on the Mosaic movement sheet available in the animal facility

## V. Procedure

Warmup (takes approximately 30 min):

1. Remove plastic cover
2. Turn on at the wall
3. Turn the dial at the front of the cabinet to on
4. Text will appear on the screen followed by 5 green lights no action is required  
*A red light indicates a fault, turn the machine off at the main switch and seek assistance*
5. The warmup countdown display will appear and when the machine is ready for use the below display will appear:



### To start:

1. To adjust either Output Power or Exposure Time select change, then clear. Enter the new values, select enter and then OK
2. If the settings are already correct select OK  
*Suggested settings for adult mouse .5 KW power at 0.78-0.8 exposure*
3. Fill the jacket around the cone of the restraint with water using a syringe, avoid adding big bubbles
4. Gently encourage the mouse to enter the restraint until the head is contained in the cone.
5. Place the detachable back on the restraint to prevent animal movements
6. Open the blue door to the microwave chamber
7. Insert the restraint containing the animal into the chamber until the back of the restraint has reached the red line on the ruler marking within the chamber  
*Never operate system without a loaded restraint inside*  
*Never insert any metal including mice with implants into the restraint*
8. Close the door, select OK and then select start twice in rapid succession
9. 'Exposure' will flash on the screen followed by 'Finished'  
*There will be a noise from the effect of the microwave on the tissues*
10. Open the door, remove the restraint, and remove the mouse with care  
*The mouse will be hot*
11. Examine mouse to confirm death and to assess suitability of settings

**Repeating the procedure on multiple mice:**

1. The screen will display the countdown until next available use
2. When 'Ready' appears on the screen either adjust settings (as above) or select next
3. Clean the restraint with water and dry
4. Replace the water in the jacket over the cone
5. Reload the restraint with the next animal, place in chamber and close door
6. Select OK and then select start twice in rapid succession

**Finishing:**

1. Ensure restraint has been removed
2. Close door
3. Select Exit and then Exit
4. The cool down timer (20 min) will appear
5. When the text 'Cool Down Completed' appears turn the equipment off at the front of the cabinet and then at the wall
6. Replace plastic cover