SOP No: **AHP 80**

SUBJECT: **Magnetic resonance imaging (MRI) in live mice**

POLICY: **This procedure must be performed by an experienced operator**.

PRECAUTIONS: **Gloves, long-sleeved gown, closed in shoes.**

EQUIPMENT:
700 MHz microimaging MR system
Surface coil
Anaesthetizing chamber
Isoflurane
Respiratory sensor
26g needle
1ml syringe
Gastrolyte
Heating pad

PROCEDURE:

1. **Restrain mouse**
2. **Induce anaesthesia with isoflurane at a dose of 4-5% in a closed anaesthetizing chamber then maintain at 1-2% by nose cone for the duration of the scan.**
3. **Set up mouse on tooth hook of surface coil.**
4. **Use padding and tape to secure respiratory sensor pad and to restrict movement of anaesthetised animal.**
5. **Place surface coil containing mouse into the MRI, ensure temperature = 30 degrees C.**
6. **Monitor respiration throughout experiment, maintain at 30-40resp/minute.**
7. **The mouse is in the MRI for a period no longer than 3 hours.**
8. **At the end of the scan, remove the mouse and stop isoflurane.**
9. **Administer 1ml of gastrolyte (warmed to room temperature) by sub-cutaneous injection to prevent dehydration.**
10. **Return mouse to home cage placed on heating pad.**
11. **Monitor mouse for one hour to ensure full recovery.**

RECOMMENDATION

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REVISED:

REFERENCES

Natt O, Watanabe T, Boretius S, Radulovic J, Frahm J and Michaelis T. (2002) ***High-resolution 3D MRI of mouse brain reveals small cerebral structures in vivo. Journal of Neuroscience Methods 120:203-209.***