

SOP No: AHP 51

SUBJECT: Infection and monitoring of mice with the fungal pathogen *Candida* spp.

REASON FOR USE: *Candida* is a fungal pathogen that causes a range of diseases in humans; from minor skin irritations, chronic mucosal thrush and acute, life-threatening hospital acquired infection. Mice are generally not infected with *Candida* unless they have a defect in their immune systems, providing a useful model for understanding the role of specific genes in fighting *Candida* infection. This protocol allows the researcher to monitor the effectiveness of a mouse immune response to fungal infection.

POLICY: Only experienced operators are to perform this procedure

PRECAUTIONS: Gloves, mask, long-sleeve gown, closed in shoes, shoe protectors, sharps containers.
Monitor the mice closely when using a heat lamp.
All procedures must be conducted in a quarantined area of the animal house.
Dispose of carcasses by incineration.
Bag and seal all waste for autoclaving.
Swab benches with anti-mycotic agent such as Trigene advance

EQUIPMENT: Heat lamp
Conical bench-top mouse restraint
Masking tape
Prepared *Candida*
Anaesthetic of choice
25G needle
1mL syringe
20µl pipette and tips
Sterile Cotton-tipped Ear/nose/throat (ENT) swab
Sterile 5ml Screw cap tube
Tube rack
Sterile saline

PROCEDURE:

Mice can be infected with *Candida* via several routes of administration:

Systemic Infection

1. Secure the mouse restraint device to the bench top using masking tape.

2. Place the cage containing the mice to be injected under a heat lamp to dilate the tail vein.
3. Prepare the syringe and needle and draw up the required volume of prepared Candida.
4. Place the mouse in the conical bench-top mouse restraint and hold the tail taut.
5. Insert the needle into the tail vein and inject the Candida.
6. Monitor mice twice daily

Vaginal Infection

1. Restrain the mouse by hand as described in [SOP AHT 01](#) and lightly anaesthetise mouse.
2. Prepare 20 µl of yeast suspension with pipette
3. Gently apply directly into the vagina
4. Return animal to clean cage
5. Monitor mice daily

Vaginal Monitoring

1. Restrain the mouse by hand as described in [SOP AHT 01](#) and lightly anaesthetise mouse
2. Prepare a sterile ENT (cotton) swab and 5ml screwcap tube
3. Moisten the swab with sterile saline and gently apply directly into the vagina.
4. Return mouse to clean cage
5. Place swab in tube and seal

Oral Infection

1. Restrain the mouse by hand as described in [SOP AHT 01](#) and lightly anaesthetise mouse
2. Prepare 20 µl of yeast suspension with pipette
3. Open the jaws and apply directly into the mouth.
4. Return animal to clean cage.
5. Monitor mice daily

Oral Monitoring

1. Restrain the mouse by hand as described in [SOP AHT 01](#) and lightly anaesthetise mouse
2. Prepare a sterile ENT (cotton) swab and 5ml screwcap tube
3. Moisten the swab with sterile saline and gently apply directly into the mouth.
4. Place swab in tube and seal
5. Return mouse to clean cage under heat source
6. Monitor until fully recovered from anaesthetic

RECOMMENDATIONS:

- 1. Volume must be no greater than 200uL.**
- 2. Monitor mice closely for an hour after the injection (no ill-effects are expected from sublethal doses in immunocompetent mice).**

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REVISED:

REFERENCES

- 1. Arendrup, M., Horn, T., and Frimodt-Møller, N., Pathogenicity of Eight Medically Relevant Candida Species in an Animal Model. *Infection* 30 (5), 286 (2002).**