

SOP No: AHP 57

SUBJECT: Temperature probe insertion and temperature measurement in pigs

REASON FOR USE: Insertion of a subcutaneous thermal probe allows the capture of data related to changes in the temperature of skin following a burn.

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

PRECAUTIONS: Overalls, gloves, closed in shoes

EQUIPMENT:

- 14 gauge cannula
- 70% ethanol
- Swabs
- Temperature probe/thermocouple
- Thermometer (e.g. Fluke 54II)
- Tape e.g. small piece of Fixomull®
- anaesthetic

PROCEDURE:

- Ensure the animal is stabilised under anaesthetic.
- Swab the site of insertion on the skin with 70% ethanol. To find the exact site, locate where the centre of the burn will be ([SOP AHP58](#)) and lay the cannula along the skin horizontally from this point to measure 1 x length of the needle.
- Insert the 14 gauge cannula needle on an angle to penetrate the skin. Lift the skin slightly by pinching the skin between thumb and forefinger and advance the needle under the dermis until the tip of the cannula is positioned under the centre of the proposed burn injury. Remove the needle from the cannula.
- Swab the thermocouple temperature probe with 70% ethanol and insert it through the cannula, under the skin. Tape the probe into position on the skin surface so that it won't fall out of the cannula. Plug the thermocouple into the thermometer.
- If necessary, repeat this procedure for another burn on the animal (if the thermometer multiple thermocouples).
- Set the thermometer so that it captures the subdermal temperature measurements at standard intervals (e.g. every 15 sec) during the experiment. Once the experiment is finished, the measurements

recorded in the thermometer can be downloaded to a computer for analysis.

- **Duration of insertion depends on the duration specified in the AEC application.**

RECOMMENDATIONS:

DATE ISSUED: 28 April 2010

REVISED:

REFERENCES

1. Yuan J, Wu C, Holland AJ, Harvey JG, Martin HC, La Hei ER, et al. (2007). Assessment of cooling on an acute scald burn injury in a porcine model. *J Burn Care Res.* May-Jun;28(3):514-20.
2. Cuttle L, Kempf M, Kravchuk O, Phillips GE, Mill J, Wang X-Q, et al. (2008b). The optimal temperature of first aid treatment for partial thickness burn injuries. *Wound Repair Regen.*16(5):626-34.