



**Routine - Standard operating procedure (SOP)
Unit of Comparative Medicine (AKM)**

Preparation of animals for aseptic surgery

Approved by: Leader AKM

Date: 10.11.2020

Revisions since last version: Corrected the second bullet points under “use of electrical clipper”. Added a bullet point under “disinfection of skin”

1. Background and purpose

Correct methods for A) removal of hair, B) antiseptic preparation of the operation area, and C) aseptic surgical technique significantly affect the experimental results and animal welfare during and after surgery. All three methods are therefore required when performing surgery (c.f. Forsøksdyrforskriften §§ 9 and 11) and have to be performed *lege artis* independent of whether or not it has been described in the FOTS-application.

The purpose of this routine is to ensure that animals are correctly prepared for surgery (e.g. step A and B mentioned above) to prevent complications during surgery and post-operative infections. The routine also apply when performing ultrasound examination that requires removal of hair.

2. Responsibilities

Leader AKM is responsible for approving this routine. AKM is responsible for compiling, revising, and distributing this routine.

All employees and users for AKM are responsible for following the routine.

3. Procedures

A. REMOVAL OF HAIR

- Hair removal in rodents, rabbits and pigs is only allowed on deeply sedated or anaesthetized animals.
- Removal of hair should be done with an electrical clipper. Racers cause micro-lacerations in the skin and is NOT allowed.



Use of electrical clipper

- The clipper has to be appropriate in size for the animal, with a clean and sharp blade.
- The blade should be moved slowly and against the hair direction, and with the blade parallel along the skin (and not in an angle). Correct use is very important in order not to cause skin damage (“razor burn”).
- The clipper should be cleaned and maintained regularly, at least at the end of the day when work is finished.

Use of hair removal cream

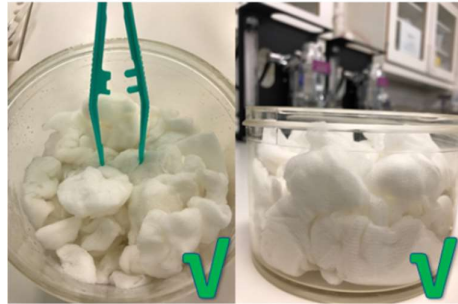
Hair removal cream may be needed for some applications when it is required to remove all hair.

- Hair removal creams are highly basic and should be used with the uttermost care to avoid skin irritation and damage.
- Hair removal cream should NOT come into contact with mucous membranes.
- The cream should be adapted to sensitive skin and without perfume or other additives
- An electrical clipper should be used first to remove as much as possible of the hair in the surgical field before hair removal cream is applied.
- Hair removal cream should be applied on the remaining hair using a Q-tip and should be washed off within 60 seconds. A moistened gaze should be used to remove the cream, including any cream in the outer edge of the operational field.

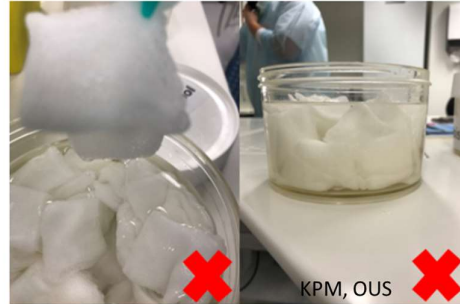
B. DESINFECTION OF THE SURGICAL SKIN AREA

- Appropriate skin disinfection consists of 3 repeated cycles using 4% chlorhexidine soap (Hibiscrub®) and minimum 70% alcohol (e.g. 75 % Antibac surface disinfectant)
- Brain meninges and mucous membranes should NOT be exposed to chlorhexidine. When performing surgery involving exposure of meninges/brain or mucous membranes, Hibiscrub should be replaced by povidine-iodien (e.g. Jodopax Vet)
- Prepare two containers, one for Hibiscrub® and one for Antibac surface disinfectant. Place 3 x 3 cm gauzes in the containers and soaked them thoroughly in Hibiscrub® and Antibac alcohol disinfectant, respectively.

- The gauzes should be completely moist, but not dripping (e.g. NOT a lot of excess fluid that cause spill and possible hypothermia in the animals)



Correct amount of liquid



Wrong, too much liquid

- Use the disposable forceps to grab and hold the gauze, and to wash and disinfect the skin. You can use the same forceps through the whole process described below.
- The forceps should be placed in the alcohol container when not in use, and disposed at the end of the day.
- The operational field and its edge zone should be washed and disinfected with **3 repeated cycles** of 4 % chlorhexidine (Hibiscrub®) and 75 % isopropyl alcohol. Each of the 3 cycles consist of thorough wash with Hibiscrub followed by disinfection with alcohol, respectively.
- Wash the surgical area with careful back and forth movements (not in circles)
- After the last wash with alcohol the skin needs to dry for at least 30 seconds before surgery starts
- The animals should as far as it is practical possible, be draped with sterile (autoclaved) cotton cloth or other appropriate sterile surgical drape material to ensure that the surgical operation area remains clean and uncontaminated

See separate routine for preparation of the surgeon and surgical equipment