Ausschuss für Hygiene / Working Group on Hygiene

Handling of microisolator cages

Microisolator cages (filter cages, IVCs) provide a good and flexible protection from infection transfer between cages. They match a barrier at the standard of a single cage. However, this protection is only warranted if the cages are handled correctly.

Safety cabinet

Microisolator cages can only be used properly together with a safety cabinet. The safety cabinet has to class II (biohazard). This means that both the vectored airflow within the workbench and the discharged air has to be HEPA filtered. All manipulations with open cages are to be carried out in the ventilated workbench. The workbench guarantees that microorganisms can not enter the cage from the outside and, at the same time, that microorganisms which eventually exist in the cage, do not contaminate the room air. As a bonus, also dust and allergens are removed by the filters.

When selecting a workbench, one has to pay attention that the face-plate is vertically adjustable and shows an appropriate height that does not disturb the proper function of the cabinet. An add-on switchable UV lamp is advantageous.

Sterilisation

Also the use of a liquid sterilisation agent is necessary. The hands (glove-protected) manipulating the cages in the bench have to be steadily decontaminated in order to prevent introduction of microorganisms from the outside into the cage (and vice versa). The agent has to take effect immediately (seconds) and has to show sufficient potency. A hand-disinfectant/area-disinfectant is insufficient, as well as is alcohol (regardless of the concentration). Sterilisation agents based on glutaraldehyde or chlorine dioxide are recommended.

Preparing of the microisolator cages

Before use, microisolator cages have to be autoclaved. Therefore, the cages have to be furnished with bedding and autoclaved with attached filter lid. Autoclaved chow and water is added in the workbench. It is important that the cages are not opened outside the safety cabinet after being autoclaved.
After use the cages should be opened only in the lavatory. Cages in which infectious animals were housed (infection experiments, spontaneous infection) should be autoclaved in closed conditions prior to cleaning.

Changing of cages

- **Switch-on safety cabinet**
- **Prepare sterilisation solution** (according to the manufacturer's instructions) and put it into the safety cabinet in a bowl. Mostly, the solution must be prepared freshly from the stock solution and is stable only for a limited period (glutaraldehyde or chlorine dioxide).
- Long-sleeved working clothes and one-way gloves have to be used. The gloves have to be moisturised with sterilisation solution before and between the work-steps.
- **Changing of cages**. A clean cage and a soiled cage are put side by side in the workbench. Both cages are opened. The lids are placed next to the cages (upside down) or put against the back board. The mice are taken at the tail (at best with forceps) and set into a clean cage. It is recommended to wet the hands and forceps regularly between each step with sterilisation solution. The cages are closed and taken out of the workbench.
- The work space should be regularly moistured with disinfection solution.
- After termination of the work switch on the UV disinfection lamp.

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