



**MicroBioS**  
microbiological services

Info Flyer

## Collection of Direct Samples from the Mouse



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The collection of direct samples is a critical point because incorrect sample taking can have an impact on the test results. Therefore, the personnel should be trained in the respective procedures and the animals should be accustomed to the handling as well.

For your support we have prepared the following short guide for the collection of direct samples in the mouse.

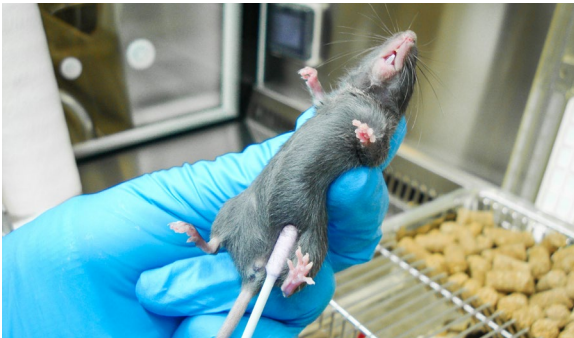
The presented techniques are usual methods as an example. If other techniques are successfully established in your animal facility, these procedures may be followed for the direct sampling to use the already existing experience.

Please take your samples carefully to avoid contamination and label all samples clearly.

### 1) Fur swab

Analysis of ectoparasites (fur mites)

For the fur sampling a so called «sticky swab» is used. This swab has two different parts, one white Q-tip like cotton part and one slightly pink and sticky part. For the fur swab only this sticky pink part is used!



#### Sampling procedure

- swab the fur with the sticky pink part of the «Sticky swab»
- include dorsal and ventral side of the mouse

#### Dorsal side

- place and fix the mouse on the wire lid of the cage
- carefully swab the fur around the eyes, on the neck and back of the mouse

#### Ventral side

- take the mouse from the lid and fix it in the hand
- swab the fur in the axillar, belly and inguinal region with the same sticky swab

Place the sticky swab not only on the fur surface but with a slight rotation against the direction of hair growth deep in the fur.

- after fur collection, cut off and discard the stick including the white cotton part
- place each pink sticky swab in a small clean tube



#### Number of samples

usually one sticky swab per animal

The capacity of the sticky swab is limited. Therefore, and to avoid transfer of parasites between animals, the use of one swab for more than one animal is not recommended.



## 2) Feces samples

Analysis of endoparasites such as helminths and protozoa; on request also bacteria (e.g. salmonella)



### Sampling procedure

- place the mouse on the wire lid of the cage
- fixation of the mouse at the tail
- often defecation occurs spontaneously
- collect fecal pellets with a small sterile tube
- if needed, a gentle massage of the anal region stimulates defecation

If fecal pellets cannot be collected directly from the animals, it is possible to take feces from the bedding of the respective cage. Please note that in case of group housing you will not get individual but cage based results. For bacteriological analyses always fresh feces should be collected as described above.



### Number of samples

1-2 fecal pellets per animal for FELASA quarterly and yearly PCR screening

For an optional bacteriological test at least one additional fecal pellet per animal should be collected and provided in a second, separate tube.

Depending on your requirements, it is possible also to pool fecal samples. This can be of advantage for a less complex and faster screening of several animals. On the other hand, pooled samples will not provide individual results. Furthermore, especially in infections with low prevalence, pooling of samples may lead to a dilution of pathogens and hence a decrease in the sensitivity of the method. Based on this, we recommend to pool not more than five samples.

## 3) Pharynx swab

Analysis of bacteria



There are two different types of swab for the pharynx – one for bacteriology, one for PCR:

- PCR-swab (green): like a small «brush», tube without medium
- bacteriology swab (orange): like a small Q-tip (cotton swab), tube with medium

The sampling procedure is the same for both swabs.



### Sampling procedure

- fixation of the mouse in the hand, with straight head and preventing movements
- put the swab carefully in the mouth and on side of the tongue up to the throat
- avoid injuries of the tissue and mucosa
- after sampling, put the swab in the respective tube

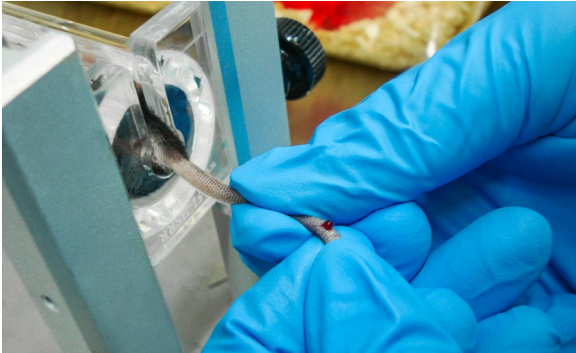
These swabs should also be used for only one animal each because of the limited capacity and risk of transfer of pathogens between animals when more animals are «pooled».



#### 4) Blood samples – Dry Blood Spots (DBS)

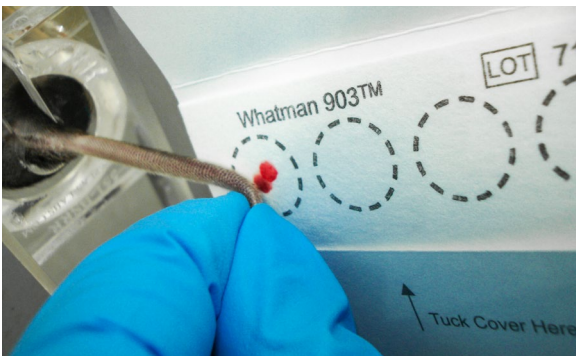
Detection of antibodies caused by different virus or bacterial infections (serology)

Dry blood spots are established in rodents for taking small blood volumes and easy transport of the samples.



**Sampling technique** by the example of the lateral tail vein:

- fixation of the awake animal in a restrainer
- if necessary, the blood flow can be stimulated by gentle massage or warmth
- make a careful incision of the lateral vein on one (left or right) side approx. 2 cm from the base of the tail
- immediately collect the drops of blood with the DBS card



Let the DBS card dry for 1 to 2 hours after sampling.

**Amount of blood**

- for FELASA quarterly package: 2 spots on the DBS card
- for FELASA yearly package: all 4 spots, if possible

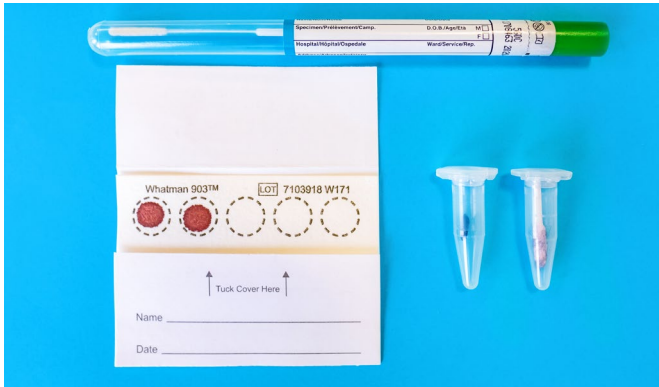
In case of insufficient amount of blood, the sampling can be continued on the same spot at another day taking into account the animal welfare requirements. The DBS card can be stored for a few days at room temperature on a dry and clean place.

Other easily accessible veins such as vena saphena lateralis may be used for the blood sampling, especially when the method is already established in the animal facility.

The collection of blood from the ventral tail artery is not recommended.

The blood samples can also be pooled on the DBS cards, depending on the analytical question. As described above for feces samples, pooled samples will not provide individual results. Furthermore, in slight infections or with low prevalence, the mix of samples may lead to a dilution of antibodies and hence a decrease in the sensitivity of the method. Based on this, we recommend to pool maximum five blood samples.

## 5) Storage of samples



- store the samples in the respective tubes
- tubes must be tightly closed
- DBS cards should be closed after drying

All samples must be clearly labelled.

The samples should be shipped to the lab as soon as possible.

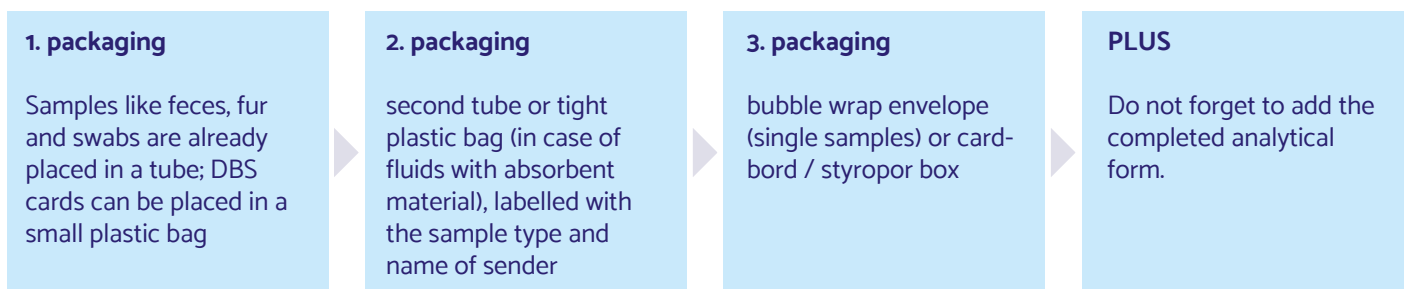
DBS cards and sticky swabs can be shipped at ambient temperature. When fresh feces and pharynx swabs are sent immediately and delivered at the same day, these can be sent also at ambient temperature. Otherwise, feces samples and pharynx swabs should be cooled for the shipment.

If not sent immediately, direct samples can be stored as follows:

| Sample                     | Storage conditions   |
|----------------------------|--|
| Feces samples PCR          | For a few hours cooled, over night in the freezer (-20°C)  |
| Feces samples bacteriology | Over night in the refrigerator   |
| Pharynx swab PCR           | If not sent immediately, dry swab under sterile conditions approx. 2 hrs before placing in the tube; thereafter, store for few hours or over night in the refrigerator |
| Pharynx swab bacteriology  | Over night in the refrigerator   |
| DBS card                   | After drying for a few days (max. one week) at room temperature; dry and clean conditions  |
| Sticky swab                | Over night in the refrigerator   |

## 6) Sample Shipment

In general, biological material has to be packed with three layers.



To ensure fast processing of your samples, please contact our lab before sending the material:

### Shipment address

MicroBioS  
Christoph Merian-Ring 31a  
CH - 4153 Reinach

### Contact for shipment of samples

tomka@microbios.ch  
0041 61 416 96 15

In case of questions, please do not hesitate to contact us!



**MicroBioS AG**  
Lörracherstrasse 50  
CH-4125 Riehen

 +41 61 416 96 10  
 [info@microbios.ch](mailto:info@microbios.ch)  
 [www.microbios.ch](http://www.microbios.ch)