GVG
Genetic Monitoring

Snooplex® FastPrep

All-in-one solution for mouse
DNA sampling and genotyping

Snooplex® FastPrep

Pocket guide V-04 I 10-2021

Contents

Snooplex FastPrep – Highlights

- Next level mouse DNA sampling and genotyping without tail biopsies
- Ready-to-use system for simple, rapid PCR testing of swab specimens
- Fast one-step DNA extraction in just 15 min without extra pipetting steps
- Optimized PCR buffer for small DNA amounts
- PCR setup at room temperature thanks to integrated hot-start technology
- Available with 2-types of mouse-specific internal PCR controls to check successful DNA extraction and amplification

Product description

Snooplex FastPrep is an innovative and highly reliable all-in-one solution developed by GVG Genetic Monitoring for mouse DNA sampling and genotyping without tail biopsies. It is ideal for improving animal welfare in rodent breeding.

From sampling to complete PCR in three easy steps!

The ready-to-use Snooplex FastPrep kit enables the DNA extraction and PCR testing of buccal mucosa swab samples taken from mouse cheeks. Usually, tail biopsies provide more DNA than extraction from swab specimens. However, the limited yield of extraction can be compensated for by using the newly designed Snooplex lysis buffer for DNA extraction accompanied by specially formulated, optimized PCR reaction components.

The Snooplex FastPrep comes with DNA-free sterile swabs, Snooplex lysis buffer, 5x PCR reaction buffer, Hot-start *Taq* DNA polymerase, nuclease-free water, and one of two internal mouse control mixes of your choice.

Kit contents

Each kit contains the following components:	
Sterile, DNA-free swabs, each packed separately and treated with ethylene oxide	96x
Snooplex lysis buffer	1x 10 ml
5x PCR reaction buffer (violet cap)	1x 500 µl
5x Control mix A, B or C (yellow cap)*	1x 500 µl
Taq DNA polymerase (white cap)	1x 100 µl
Nuclease-free water (blue cap)	1x 1.5 ml

*There are 3 types of control mix: A – with 231 bp internal mouse control, B – with 850 bp internal mouse control, C – with no internal mouse control. (gel-loading buffer included)

Shipment and storage

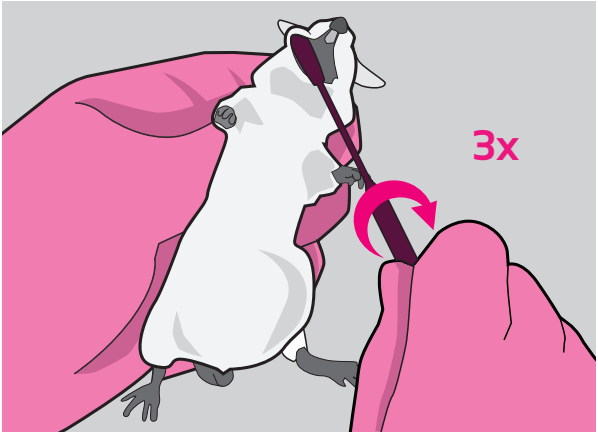
The Snooplex FastPrep kit is shipped at room temperature. The kit components are stable until the expiry date stated on the label.

Snooplex lysis buffer	+8°C
5x PCR reaction buffer (violet cap)	+8°C
5x Control mix A, B or C (yellow cap)*	+8°C
Taq DNA polymerase (white cap)	–20°C
Nuclease-free water (blue cap)	+8°C

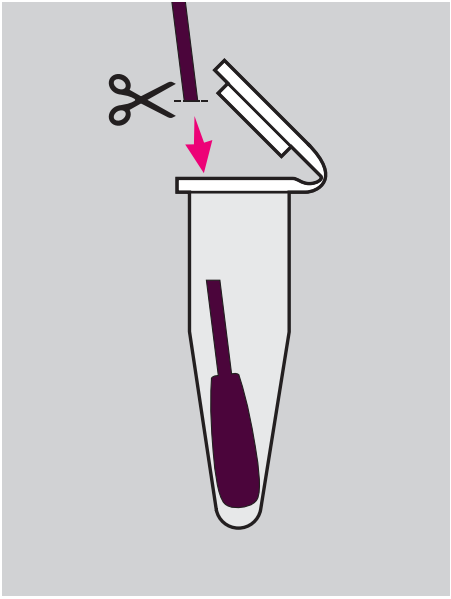
Sampling

1. Open the outer packaging of the swab.

2. Hold the mouse securely and insert the brush-like end of the Snooplex FastPrep swab into its mouth. Rub the swab on its inner cheek by rotating the swab three times around its axis.
   This step is vital and must therefore be carried out properly as otherwise the amount of material collected could be insufficient for downstream DNA extraction. Note that you are collecting cell material from mucosa and not just a saliva sample.



3. Remove the swab from the mouse's mouth and place the brush-like end of the swab into a 1.5 ml reaction tube. Release the distal part by cutting with scissors. The swab can be stored at –20°C if the time span between collection and DNA extraction exceeds 24 hours.



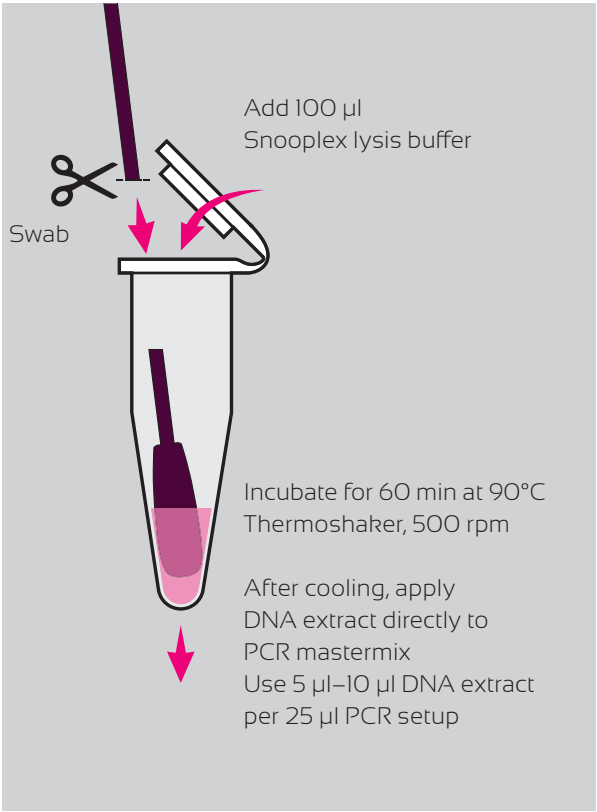
DNA extraction

1. Cut off the brush-like end of the swab and place it into a 1.5 ml reaction tube.

2. Add 100 µl of Snooplex lysis buffer to the reaction tube. The liquid should cover the end of the swab. More than 100 µl is not recommended to avoid unwanted dilution of the DNA sample.

3. Incubate the swab for 60 min at 90°C with shaking at 500 rpm, e.g. in a thermoshaker suitable for 1.5 ml reaction tubes.

4. After cooling, the DNA extract can be used immediately for PCR setup. Usually 5 µl of extract contains sufficient DNA for successful PCR. (Do not use more than 10 µl of DNA extract per 25 µl PCR reaction.)


Add 100 µl
Snooplex lysis buffer
Swab
Incubate for 60 min at 90°C
Thermoshaker, 500 rpm
After cooling, apply
DNA extract directly to
PCR mastermix
Use 5 µl–10 µl DNA extract
per 25 µl PCR setup

PCR setup

1. Mix all the components thoroughly and centrifuge briefly before use.

2. Prepare a master mix according to table on page 13.

3. Prepare a total volume of master mix to allow for 2–3 additional reactions. We recommend including positive and negative controls. The master mix contains all the components necessary for PCR except template (mouse) DNA and target-specific primers.

4. Control mix contains primers for internal positive mouse control and is supplied in gel loading buffer. Therefore, the PCR product can be directly applied to agarose gels.

5. Add 5 µl of template DNA to give a final volume of 25 µl. For positive control, use a defined positive sample. For negative control, use a wild-type mouse DNA sample.

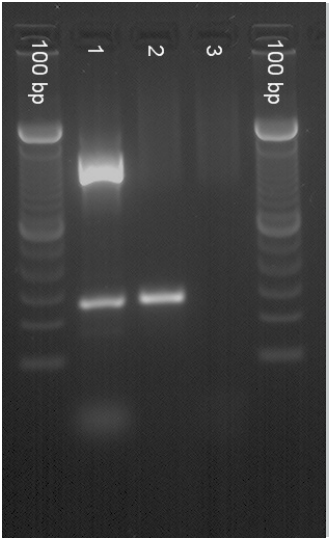
Component	
5x PCR reaction buffer	5 µl
5x Control mix A, B or C*	5 µl
Taq DNA polymerase	1 µl
Customer-specific primer (100–400 nM)	Variable
Nuclease-free water	Variable
Template DNA (5 µl is usually sufficient)	Variable
Total volume	25 µl

*Depending on the size of your specific PCR product, choose one of the three internal mouse controls that generate PCR products with a length of either 231 bp or 850 bp (or none).

Data interpretation

An example of a typical electrophoresis plot is shown in the figure below.

First, check for the presence of internal mouse control. An appropriate band at 231 bp (or 850 bp) indicates the presence of mouse DNA in the test system when your primers fail or give no products.



Electrophoresis plot:
Lane 1: positive sample;
Lane 2: negative sample;
Lane 3: no DNA.

In order to handle a competitive situation regarding the amplification of the internal mouse control and your primers, the Snooplex control primers are set up in such a way that PCR-products will be produced in favor of your primers, and 231 bp (or 850 bp) control band might fade out.

If no control band or your PCR-products are visible at all, too little DNA has been added. Either sampling was insufficient (the swab needs to be rotated three times) or no DNA has been added to the PCR mix.

Order details

Product	Description	Cat. no.
Snooplex FastPrep A, for 96 reactions	with 231 bp internal control	SFP-A-001
Snooplex FastPrep B, for 96 reactions	with 850 bp internal control	SFP-B-001
Snooplex FastPrep C, for 96 reactions	without any internal control	SFP-C-001

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