

## Genetic tests in Leonberger dogs

(May 2019)

### Genetic disorders of Leonbergers:

Three disorders were genetically characterized by the Universities of Bern (CH) and Minnesota (USA), and genetic tests were developed. These include two forms of *polyneuropathy* (**LPN1** and **LPN2**), most likely dominantly inherited diseases affecting the peripheral nervous system, and *leukoencephalomyelopathy* (**LEMP**), a recessively inherited disorder of the central nervous system.

The genotypes are reported for **each disorder individually** as follows:

**N/N** (clear of the mutation), **D/N** (heterozygous carrier), and **D/D** (homozygous affected dog).

Further information and breeding recommendations can be found at [www.genetics.unibe.ch](http://www.genetics.unibe.ch).

### Sand coat color:

Gene test for a coat color dilution at the **I (intensity)** locus characterized by the Universities of Bern (CH) and Rennes (F) identifies the sand-colored Leonbergers and heterozygous carriers. This trait follows autosomal recessive inheritance with estimated variant allele frequency of 11.5% in Leonbergers and is **not related to any disease**. The genotypes are reported as follows: **I/I** (sable coat color), **I/i** (heterozygous carrier, sable coat color), and **i/i** (sand coat color).

For the genetic testing a **single blood sample per dog (1-5 ml EDTA blood)** is required and sufficient to perform the detection of all causative variants. Blood samples must be labeled properly. Please, use an **individual order form for each single dog** and send them together with the samples in a padded envelope without cooling to:

In case of questions please contact:

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**Institute of Genetics  
 Leonberger-Gentest  
 Bremgartenstrasse 109a  
 CH-3001 Bern**

**Price** for: single test **100** CHF/EUR, two tests **150** CHF/EUR, three tests **175** CHF/EUR, four tests **200** CHF/EUR.

Once the sample arrives, we will send an invoice with payment instructions (including details as IBAN, BIC) by e-mail. After the receipt of your payment our lab will perform the tests and send the results **by e-mail as PDF file**. Please note, usually it takes 2-6 weeks until a result is obtained.

**Test (please check):**    **LPN1**                    **LPN2**                    **LEMP**                    **sand coat color**

### Name&Kennel

Registry ID

Chip No.

Date of birth

male

female

coat color

Owner name

Address

ZIP/City/Country

E-mail

### Owner's declaration of consent

I agree to genetic testing of the animal indicated above. I also agree that the test results and sample material may be used for further scientific research. The leftover sample material will belong to the University of Bern.

Date

Owner's signature

### Confirmation of correct sampling and animal identity

Date

Veterinarian (stamp & signature)