

**Fra:** Labogen [labogen@laboklin.com]  
**Sendt:** 20. mai 2021 15:23  
**Til:** dyrlegene@vets4pets.no  
**Emne:** Re: labogen  
**Vedlegg:** willemo.pdf; Genetische Bestimmung der Blutgruppen bei Katzen\_engl0.pdf

Dear Mrs Bakken,

thanks for your email. Wiking is genotype N/c, that means the serological blood group is A, but the cat may also inherit AB.

Willem is Genotype b/b or N/b, that means 2 out of 4 variants for the recessive b-allele are heterozygous N/b.

If they are both on the same allele the cat is heterozygous N/b with serological blood group A (carrier of B), if they are both on different alleles the cat is b/b and serological B.

We can not make this difference in our genetic test so additionally the serological blood group should be tested in this case.

Please find attached our information about blood group inheritance in cats, if you have any other questions please do not hesitate to contact us again.

Kind regards

Bärbel Gunreben  
Diplombiologin  
Molekularbiologie

### **LABOKLIN GmbH & Co. KG**

Steubenstr. 4  
97688 Bad Kissingen  
Tel: +49 (0) 971 - 7202 0  
Fax: +49 (0) 9 71 - 68 54 6  
Internet: <https://shop.labogen.com/>

Registergericht Schweinfurt, HRA 3631  
Geschäftsführung: Dr. Elisabeth Müller



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Original Message processed by david@

labogen 18. Mai 2021, 20:35 Uhr

Von [Vets4Pets](#)

An [labogen@laboklin.com](mailto:labogen@laboklin.com)

Hi

Our nurse have two ragdolls, that we have send bloodsamples to you to check among other things their bloodtype.

I need some help to interpret the results for both Willemo and Wikings bloodtypes.

It states that Willemo has b/b or N/b, so far??

Wiking has N/c, that it AB so far??

What does it mean when it states so far.... And what does the rest underneath mean....

I spoke to the Norwegian representative, but she did not understand it either,  
and asked me to email you.

Best regards

Ingeborg Bakken  
Veterinarian  
Vets 4 Pets

Genetic determination of bloodgroup - PCR

Result: Genotype N/c

**LABOKLIN**  
LABOR FÜR KLINISCHE DIAGNOSTIK GMBH & CO. KG

Mrs.  
Nora Dimple  
Sundbyveien 26  
3478 Naersnes  
Norwegen

LABOKLIN GmbH & Co KG  
Steubenstraße 4  
DE-97688 Bad Kissingen  
Fax-Nr.: +49 971 68546  
Tel.: +49 971 72020

**Report**

No.: 2104-W-85005  
Date of arrival: 27-04-2021  
Testing started: 27-04-2021  
Date of report: 30-04-2021  
Testing completed: 30-04-2021

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Patient identification: Cat	Male	* 31-10-2020
	Ragdoll	
Owner / Animal-ID:	Dimple, Nora	
Type of sample:	EDTA-Blood	
Date sample was taken:	15-04-2021	
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Parameter	Value	Reference value
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Name: (N) Amasing Star's Wisdom Wiking of Heimdal

ZB-  
Nummer: (NO) NRR LO 199314

Chip-  
Nummer: 578098100738048

Tattoo-Nummer: ---

Hypertrophic cardiomyopathy (HCM) - PCR

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation for Hypertrophic Cardiomyopathy in the MYBPC3-gene (A31P).

Trait of inheritance: autosomal-dominant

Scientific studies found correlation between the mutation and symptoms of the disease in the following breeds:  
Maine Coon and related breeds

Hypertrophic Cardiomyopathy (Ragdoll) - PCR

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation for Hypertrophic Cardiomyopathy in the MYBPC3-gene (R820W).

Trait of inheritance: autosomal-dominant

Scientific studies found correlation between the mutation and symptoms of the disease in the following breeds:  
Ragdoll and related breeds

Polycystic kidney disease (PKD) - PCR

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation for Polycystic Kidney Disease in the PKD1-gene.

Trait of inheritance: autosomal-dominant

Pyruvatkinase Deficiency:

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation



for Pyruvate Kinase Deficiency in the PKLR-gene.

Trait of inheritance: autosomal-recessive

Progressive Retinal Atrophy (rdAc-PRA):

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation for Progressive retinal atrophy (rdAc-PRA) in the CEP290-gene.

Trait of inheritance: autosomal-recessive

Genetic determination of bloodgroup - PCR

Result: Genotype N/c

Interpretation: The examined animal is heterozygous for the causative genetic variant found in correlation with the serologic blood group AB (C) so far.

The test detects the genetic variants of the alleles b and c.  
Allelic series: N>c>b

Scientific studies found correlation between the allele c and the serologic blood group AB (C) exclusively for Ragdoll cats.

Feline Spinal Muscular Atrophy (SMA) - PCR

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation for Spinal Muscular Atrophy in the LIX1-LNPEP-gene.

Trait of inheritance: autosomal-recessive

Scientific studies found correlation between the mutation and symptoms of the disease in the following breeds:  
Maine Coon and related breeds

Glycogen storage disease (GSDIV) - PCR

Result: Genotype N/N

Interpretation: The examined animal is homozygous for the wildtype-allele. It does not carry the causative mutation for Glycogen storage disease Type IV in the GBE1-gene.

Trait of inheritance: autosomal-recessive

Scientific studies found correlation between the mutation and symptoms of the disease in the following breeds:

## Norwegian forest cat and related breeds

### Sampling:

The following impartial person (veterinarian, breed warden, or similar) signed the form for the sampling and identity check of the animal:

Anne Bettina Ruüd

These results are based on the sample material submitted to our laboratory.

This was suitable if not stated otherwise. The submitter is responsible for the accuracy of the information regarding the sample. This report can only be transmitted in toto and unchanged. Doing otherwise requires written permission from Laboklin GmbH & Co. KG.

LABOKLIN is an accredited laboratory according to DIN EN ISO/IEC 17025:2018, DAkkS No. D-PL-13186-01-01 and D-PL-13186-1-02. The accreditation applies to all test procedures listed in the accreditation certificate.

\*\*\* END of report \*\*\*

Fr. MSc Laura Hübner  
Abt. Molkekularbiologie

\*\*\* N E W S \*\*\*

### PCR diagnostics for equine herpes virus

Due to the currently increased need for PCR tests for EHV1 and EHV4, we are performing this test for you up to 4 times a day.

Results are usually available within 1-2 working days after arrival