DNK s.r.o.
diagnostické centrum

Laboratory diagnosis of chronic viral diseases of cats

by Real-Time PCR

Feline leukemia

The source of the infection

FeLV (Feline Leukemia Virus)

- ✓ Family *Retroviridae*, RNA virus
- ✓ Transmission by contact, iatrogenic and intrauterine route

Biological specimen

- **Whole blood**
- **Leukocyte fraction of blood**

Relevance of diagnostics

- ✓ 3-20% of the domestic cat population is infected.
  Most infected die within 4 years,
  especially for secondary infections due to the development of immunodeficiency
- ✓ Infection of kittens (in utero or before 8 weeks of life) leads to the development of persistent viremia and immediate death
- ✓ Wild animals are also susceptible to the virus

Features of the disease:

- ✓ Long incubation period (4-30 weeks)
- ✓ Chronic course with damage to the hematopoietic system (anemia, malignant tumors of lymphatic tissues and myeloid tissues, fibrosarcomas)
- ✓ Secondary infections on the background of immunosuppression
- ✓ Possible asymptomatic carrier of the disease

Feline immunodeficiency virus

The source of the infection

FIV (*Feline Imunodeficiency Virus*)

- ✓ Family *Retroviridae*, RNA virus
- ✓ Transmission by contact, iatrogenic and intrauterine route

Biological specimen

- **Whole blood**
- **Leukocyte fraction of blood**

Relevance of diagnostics

- ✓ 5-20 % of the domestic cat population is infected.
- ✓ Death occurs in 20% of cases within 2 years of diagnosis, but more than 50% of those infected at this time remain clinically healthy
- ✓ Laboratory testing of pedigree cats prior to mating is recommended to reduce the risk of disease transmission
- ✓ Wild animals are also susceptible to the virus

Features of the disease:

- ✓ Manifestation 3-6 weeks after infection with a transition to a latent stage lasting 3-5 years
- ✓ Chronic course with damage to immune and nervous system, polymorphism of clinical manifestations
- ✓ Frequent and severe opportunistic infections
- ✓ The average life expectancy in the last stage of the disease is no longer than one year

Advantages of PCR diagnostics:

- ✓ Fast receipt of the results
- ✓ Reliable diagnosis of infection
- ✓ Possibility to perform the test at any stage of the disease, even without clinical manifestations

Real-Time PCR is a direct method of diagnosis, so it is important to consider the following:

- ✓ Biological specimen is collected only from the site of the suspected localization of the infectious agent
- ✓ Repeated testing is carried out 2-3 weeks after the end of treatment or vaccination
- ✓ A positive result in the absence of clinical signs of disease may indicate detection of a bacteria/virus vector

Features and advantages of RealBest-Vet diagnostic kits

- ✓ Ready Master Mix for PCR/RT-PCR: Simplification of analysis procedures and high stability of test quality
- ✓ Multiplexity: possibility of detecting two infections in one tube
- ✓ Universal protocol: all tests in one run
- ✓ Compatible devices: CFX96 (Bio-Rad, USA), DT-96 a DTprime (DNA-Technology, Russia), Gentier 96E/R (Xi'an TianLong, Science and Technology Co., Ltd., China)
- ✓ High stability of the kit: storage at a temperature of 2–8 ° C; transport up to 26 °C for not more than 10 days

RealBest-Vet diagnostic kits

Cat.№	Kit name and description	Number of tests
	Extraction kits for isolation of nucleic acids	
8889	**RealBest DNA-express** Rapid DNA extraction kit (15 minutes)	100
5453	**RealBest-Vet Alpha** DNA extraction kit, for use with KingFisher Flex system	96 (*2x48*)
5454	**RealBest-Vet Beta** DNA and RNA extraction kit, for use with KingFisher Flex system	96 (*2x48*)
5876	**RealBest-Vet Gamma** DNA and RNA extraction kit, for use with KingFisher Flex system	48 (4x12)
	Kits for the detection of rhinotracheitis and calicivirosis	
5423	**RealBest-Vet DNA FeLV** Feline leukemia virus proviral DNA detection kit	96
5424	**RealBest-Vet DNA FIV** Feline immunodeficiency virus proviral DNA detection kit	96
5425	**RealBest-Vet DNA FeLV/FIV** Kit for the differential detection of feline leukemia virus and feline immunodeficiency virus DNA	96

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