



Laboratory diagnosis of respiratory viral diseases of cats

by Real-Time PCR



Feline viral rhinotracheitis

The causative agent of infection

FHV-1 (Herpesvirus type 1)

- ✓ Alpha herpes virus, DNA virus
- ✓ Contact, airborne and intrauterine transmission route

Relevance of diagnosis

- ✓ FHV-1 is one of the most common causes of upper respiratory tract diseases and conjunctivitis in domestic cats
- ✓ Fatalities are possible due to the addition of secondary bacterial infection (bronchopneumonia)
- ✓ Infection can lead to spontaneous abortions in pregnant cats

Features of the disease

- ✓ An animal that has recovered from the disease becomes a lifelong carrier of the virus
- ✓ Chronic (latent) herpesvirus infection usually passes into the acute stage in immunodeficient states of stress, illness, etc.
- ✓ Possible complications: inflammation of the cornea, obstruction of the nasolacrimal duct, eosinophilic keratitis, herpesvirus encephalitis and others

Feline calicivirosis

The causative agent of infection

FCV (Feline Calicivirus)

- ✓ Family *Caliciviridae*, RNA virus
- ✓ Transmission by contact, alimentary and air droplets

Relevance of the diagnosis

- ✓ FCV is the most common cause of acute respiratory diseases and ulcers in the mouth
- ✓ Combination with another viral or bacterial infection may lead to death
- ✓ Most often, cats and kittens become infected in large groups
- ✓ The virus also infects wild felines

Features of the disease:

- ✓ Symptoms and their intensity vary depending on the strain of the virus
- ✓ It affects the joints as well as the lungs
- ✓ Some animals become lifelong carriers of the virus capable of infecting other cats

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

Biological specimen

- Rinses from the conjunctiva of the eyes, nasopharynx
- Rinses from erosive-ulcerative lesions of the oral mucosa
- Discharge of mucous membranes of the upper respiratory tract



Biological specimen

- Whole blood, blood plasma, serum
- Swabs from the conjunctiva, nasopharynx, erosive-ulcerative lesions of the oral mucosa
- Discharge from the mucosa of the upper respiratory tract
- Saliva
- Urine
- Biooptates and autoptates



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.No	Kit name and description	Number of tests
Extraction kits for the 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)
Rhinotracheitis and calicivirosis detection kits		
5420	RealBest-Vet DNA FHV-1 Herpesvirus type 1 DNA detection kit	96
5430	RealBest-Vet DNA FHV-1/GAPDH Herpesvirus type 1 DNA and endogenous control detection kit (<i>GAPDH</i> gene)	96
5422	RealBest-Vet RNA FCV Feline calicivirus RNA detection kit	96
5431	RealBest-Vet RNA FCV/HMBS Feline calicivirus and endogenous control RNA detection kit (<i>HMBS</i> gene)	96

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