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Diagnostic techniques for canine babesiosis

犬巴贝斯虫病诊断技术

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Animal Health Standardization (SAC/TC181). This document was drafted by Huazhong Agricultural University. The main drafters of this document are. He Lan, Zhao Junlong, Li Dongfang, Wang Sen, Yang Xinru, and Chen Fangwei.

Canine babesiosis is caused by the parasite *Babesia*, belonging to the genus *Babesia*, which infects the red blood cells of dogs. Tick-borne blood protozoan disease in dogs often presents with typical clinical symptoms such as hemolytic anemia, fever, jaundice, and hemoglobinuria. This disease is prevalent. It thrives in the warm, humid spring and summer months and spreads widely in areas where ticks are active. The main pathogen of canine babesiosis in my country is *Babesia giardiasis*. *Babesia gibsoni*, *Babesia canis*, and *Babesia vogeli* are among the species mentioned. *Bessula* is a prevalent and dominant parasite species in most parts of my country. Due to the lack of effective vaccines and cures, once infected, the host carries the parasite for a long period. Since parasites are a common cause of this disease, early diagnosis is crucial for comprehensive prevention and control. Currently, in domestic veterinary clinical practice, the diagnosis of acute cases mostly relies on blood smear imaging. Microscopic observation reveals that asymptomatic and past infections require a combination of nucleic acid and antibody testing for accurate diagnosis. To improve the accuracy of *Babesia* detection, this document comprehensively

examines the detection principles, sensitivity, and specificity of various detection methods. Considering this, a multi-method combined diagnostic protocol for canine babesiosis was developed. Preliminary clinical diagnosis indicated that the affected dog was infected with babesiosis. Babesia; Blood smear microscopy method for detecting Babesia from the peripheral blood of live animals; Polymerase chain reaction Used to detect Babesia antibodies in serum samples, for laboratory testing, epidemiological surveys, and inspection and quarantine. Diagnostic techniques for canine babesiosis

1 Scope

GB/T 47218-2026 is the Chinese national standard covering diagnosing babesiosis in dogs - a tick-borne protozoan that destroys red cells, found on blood smear and confirmed by PCR and serology. The standard fixes the sampling, the laboratory methods - serological, microscopic and molecular as applicable - the interpretation of the results and the criteria for a confirmed diagnosis. First edition, in force since 1 September 2026, one of a group of animal disease diagnostic standards published together. It was issued on 27 February 2026 and has been in force since 1 September 2026, as a first edition. The document is under the responsibility of the Ministry of Agriculture and Rural Affairs. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the clinical diagnosis, microscopic examination of blood smears, and PCR detection of canine babesiosis caused by *Babesia gibroni*. Diagnostic methods include acid testing and antibody detection using test strips. This document applies to the diagnosis, epidemiological investigation, and quarantine of canine babesiosis.

2 Normative references

This document has no normative references.

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4. Abbreviations The following abbreviations apply to this document. bp. Base pair DTT. 1,4-Dithiothreitol TAE. Tris-acetate-EDTA (tris-hydroxymethylaminomethane-acetic acid-ethylenediaminetetraacetic acid)

5.1 Epidemiology

5.1.1 Transmission route. *Babesia gibroni* is mainly transmitted naturally through tick bites. In most cases, the onset of the disease in infected dogs is related to ticks. The infection is directly related to bites, but can also be transmitted through blood transfusions,

contaminated equipment, the placenta, and through bites sustained during fights between dogs, via the bloodstream. spread.

5.1.2 Transmission vectors. Ticks such as *Haemaphysalis longicornis*, *Lupus fusiformis*, and *Lupus rubrum* are transmission vectors of this pathogen. Diagnosis of Babesia... For parasitic diseases, it is necessary to consider whether the dog has a history of tick bites.

5.1.3 Susceptible animals. The occurrence of canine babesiosis is not significantly related to the sex or age of the animal; dogs of any age may be affected.

5.1.4 Epidemic Season. Canine babesiosis is most prevalent from April to October, and its distribution and incidence season are often closely related to the distribution and activity season of ticks.