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GB/T 47130-2026

Diagnostic techniques for bovine coronavirus infection

牛冠状病毒感染诊断技术

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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: China National Academy of Quality Inspection and Testing, Nanjing Agricultural University, China Animal Husbandry Industry Co., Ltd., and China Animal Husbandry Industry Co., Ltd. Center for Health and Epidemiology, Southwest University for Nationalities, China Customs Science and Technology Research Center, China Animal Disease Prevention and Control Center, China Agricultural University Beijing Institute of Animal Husbandry and Veterinary Medicine, Chinese Academy of Agricultural Sciences. The main drafters of this document are. Wu Shaoqiang, Feng Chunyan, Wang Caixia, Yang Zhen, Xiao Jin, Zhang Lei, Song Fang, Li Weihua, Zhang Bin, Lin Xiangmei, and Yu Haoyang. Wang Huiyu, Chen Dongjie, Mei Lin, Li Haoxuan, Shi Xiju, Sun Yu, Yu Ningwei, Jia Hong.

Bovine coronavirus infection is a disease caused by bovine coronavirus (BCoV), characterized primarily by diarrhea. Bovine coronavirus (BCoV) is a gastrointestinal disease

that commonly causes diarrhea in newborn calves and winter diarrhea in adult cattle, and may also cause respiratory diseases. In my country, bovine coronavirus infection is listed as a disease. It is classified as a Class III animal disease. BCoV is a single-stranded, positive-sense RNA virus, belonging to the order Nidovirales and the family Coronaviridae. The genus *Betacoronavirus* belongs to the genus *Rhinovirus*. BCoV virus particles are polygonal or spherical, with diameters ranging from 80 nm to 160 nm. The viral diameter varies, with an average of 120 nm. It has an envelope, two types of rod-shaped projections on its surface, and a spirally symmetrical nucleocapsid. BCoV exists in nature... Infectivity lasts for about 3 days. Infection is possible year-round, but the infection rate is relatively higher in winter. Clinically, BCoV is often confused with rotavirus and other viruses. Mixed infection of pathogens in the digestive tract can worsen the condition. BCoV primarily infects cattle, but can also spread across species to other ruminants such as giraffes, alpacas, reindeer, white-tailed deer, antelopes, elk, and sambar deer. Animals. Infected cattle are the main source of natural transmission for this disease. Once infected, calves can shed large amounts of the virus, and recovered cattle can continue to shed the virus for a period of time. The virus is continuously shed through the nasal cavity or feces, making the animal a carrier. Recovered cattle have antibodies against the virus, producing immunity for approximately 1 to 3 years. Immunity. In addition to traditional virus isolation and identification and electron microscopy, laboratory testing techniques for this disease include various serological detection techniques and fractionation. Biological detection technology. Currently, there are no specific drugs for treating BCoV infection; vaccination and scientific prevention and control are the key methods for preventing BCoV infection. Key measures. Diagnostic techniques for bovine coronavirus infection

1 Scope

GB/T 47130-2026 is the Chinese national standard covering diagnosing bovine coronavirus - the cause of calf scours, winter dysentery and part of the shipping fever complex, detected by antigen tests, serology and RT-PCR. First edition, published with GB/T 47129-2026 on poultry red mite. It was issued on 28 January 2026 and has been in force since 1 August 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, sample collection, preservation and transportation, laboratory sample preparation, and virus isolation and culture of bovine coronavirus infection. Laboratory diagnostic methods include in vitro diagnostics, indirect immunofluorescence assay, fluorescent RT-PCR, and enzyme-linked immunosorbent assay (ELISA). This document applies to the diagnosis, epidemiological investigation, and quarantine of bovine coronavirus infection.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

NY/T 541 Technical Specifications for Veterinary Diagnostic Sample Collection, Preservation and Transportation

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. BCA. Bicinchoninica acid BHQ

1. Blackhole Quencher 1 BSA. Bovine serum albumin CPE. Cytopathic effect Ct. Cyclethreshold DAPI. 4',6-diamidino-2-phenylindole FAM. Carboxyfluorescein HAT. Hypoxanthine, Aminopterin, and Thymidine