

ICS 11.220
CCS B 41



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18651-2026

Replacing GB/T 18651-2002

Diagnostic techniques for bovine anaplasmosis

牛无浆体病诊断技术

Issued on: March 31, 2026

Implemented on: October 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1	Scope
5	Clinical Diagnosis
5.1	Popular Characteristics
5.2	Clinical Symptoms
5.3	Pathological Changes
6	Sample collection, preservation and transportation
6.1	Reagents and Materials
7	Microscopic examination of blood smears
7.1	Instruments and Equipment
7.2	Reagents and Materials
7.7	Result Determination
7.7.2	Negative. If the result of
8	Competitive ELISA method
8.1	Instruments and Equipment
8.2	Reagents and Materials
8.3	Antigen coating and blocking
8.4	Sample Testing
8.5	Inhibition rate
8.7	Result Determination
9	Latex Agglutination Detection Method
9.1	Reagents and Materials
9.4	Sample addition and testing
9.6	Result Determination
10.1	Instruments and Equipment
10.2	Reagents and Materials
10.3	Pathogen DNA Extraction
10.8	Result Determination
11	Comprehensive Judgment

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. This document replaces GB/T 18651-2002 "Rapid Agglutination Test Method for Bovine Anisocytosis". Compared with GB/T 18651-2002, except for... Aside from structural adjustments and editorial changes, the main technical changes are as follows:

- Added clinical diagnosis (see Chapter 5);
- Added information on sample collection, preservation, and transportation (see Chapter 6);
- Added methods for microscopic examination of blood smears (see Chapter 7);
- A competing ELISA test method has been added (see Chapter 8);
- A new method for detecting latex agglutination at the edge of bovine anisocytosis has been added to replace the rapid agglutination detection method for bovine anisocytosis (see Chapter 9);
- PCR detection methods have been added (see Chapter 10);
- Reagent preparation methods have been added (see Appendix A). 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: Henan Agricultural University, Tarim University, and Henan Provincial Animal Quarantine Station. The main drafters of this document are: Zhang Longxian, Li Junqiang, Qi Meng, Ning Changshen, Chen Shaoqu, Wu Yayun, Zhao Jinfeng, Liao Peiqi, and Zhu Ziqi. Yu Fuchang, Su Fuchun, Wang Rongjun, Li Xiaoying, Zhang Sumei, Xu Huiyan. The release history of this document and the document it replaces is as follows:
 - First published in 2002 as GB/T 18651-2002;
 - This is the first revision.

Ginale (a type of infectious disease caused by obligate parasites on bovine erythrocytes) is transmitted by approximately 20 species of ticks, including those with marginal anaplasma. Some hard ticks in the genera *Tectus*, *Tectus*, and *Haemaphysalis*. Bovine anisocytosis is mainly prevalent in tropical and subtropical regions worldwide where hard ticks are distributed. Cattle-raising areas have been found in various regions of my country, including Guangdong, Guizhou, Hunan, Hubei, Sichuan, Henan, Hebei, Jilin, and Xinjiang provinces (autonomous regions and municipalities directly under the Central Government). Reports of bovine apoplastic disease have been found in all regions (including districts). Globally, clinical outbreaks of bovine apoplastic disease are caused by peripheral

apoplastic disease, although it is also observed in Chinese cattle. Other types of aporidioid infections were detected, but these aporidioid infections often cause self-limiting disease or remain latent. (Bovine aporidioid infections) The most obvious clinical symptoms are anemia and jaundice. Cattle in endemic areas often present with asymptomatic infection, while newly introduced cattle without immunity are more susceptible. Infected cattle can have a mortality rate as high as 50%. Diagnostic techniques for bovine anisocytosis

1 Scope

GB/T 18651-2026 is the Chinese national standard covering diagnosing anaplasmosis in cattle - a tick-borne rickettsial infection that destroys red cells, detected by blood smear, by serology and by PCR, each with its own place in a herd investigation. It replaces GB/T 18651-2002 and has been in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, replacing GB/T 18651-2002. 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 specifies the detection of bovine marginal aserine infection, the sample collection, preservation and transportation of bovine aserine disease caused by it, and clinical diagnosis. Diagnostic technical requirements include blood smear microscopic examination, antibody competitive ELISA detection, latex agglutination detection, PCR detection, and comprehensive judgment. This document applies to the diagnosis, epidemiological investigation, and quarantine of bovine anisocytosis.

4. Abbreviations The following abbreviations apply to this document. BSA. Bovine Serum Albumin oxyribonucleoside) OD. Optical Density electrophoresis

5.1 Popular Characteristics

5.1.1 Animals such as cattle, dairy cows, water buffalo, and yaks are all susceptible.

5.1.2 This disease is prevalent in areas where hard ticks are distributed.

5.1.3 This disease is most prevalent during the tick season, typically appearing in June, peaking from August to October, with occasional cases still occurring in November. In other seasons, sporadic cases may occur.

5.1.4 The older the cattle, the more severe the disease and the higher its pathogenicity. Local cattle show milder symptoms, while imported cattle, purebred cattle, and improved breeds often exhibit severe symptoms. Severe clinical symptoms, with visible hard ticks on the animal's body or a history of hard tick bites.

5.2 Clinical Symptoms

5.2.1 High fever retention. The body temperature of sick cattle can usually reach above 40°C.

5.2.2 Anemia, paleness of visible mucous membranes such as the conjunctiva.

5.2.3 Jaundice, yellowing of the skin and mucous membranes, and possible darkening of urine color.

5.2.4 Superficial lymph nodes such as the anterior shoulder lymph nodes and inguinal lymph nodes are swollen, firm in texture, and sensitive to palpation.

5.2.5 Weakness, slow walking, easy fatigue, rough and dull coat, pregnant cows are prone to abortion or giving birth to weak calves, etc.

5.3 Pathological Changes

5.3.1 Abnormal red blood cell morphology, reduced number, anemia.

5.3.2 The liver is enlarged, brittle, and exhibits hepatocyte degeneration and necrosis, with disordered lobular structure.

5.3.3 Splenomegaly, softened texture, red pulp hyperplasia, and increased macrophages.

5.3.4 Enlarged lymph nodes with indistinct boundaries between the medulla and cortex, dilated lymphatic sinuses filled with lymphocytes and plasma cells.

5.4 Result Determination If a patient meets the prevalence characteristics outlined in

5.1 and exhibits three or more of the conditions described in

5.2 and/or three or more of the conditions described in 5.3, they can be considered a suspected case of bovine erysipelas. Physical case.

6.1 Reagents and Materials

6.1.1 Medical protective clothing.

6.1.2 Sterilized scissors and tweezers.

6.1.3 Anticoagulation vacuum blood collection tubes.

6.1.4 Standard blood collection tubes.

6.1.5 Use a 6-gauge needle for tail vein blood collection and a 16-gauge needle for jugular vein blood collection.

6.1.6 Disposable syringes of various specifications.

6.2 Sample Collection Determine the blood collection site, either the jugular vein or the tail