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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 27982-2026

Replacing GB/T 27982-2011

Diagnostic techniques for peste des petits ruminants

小反刍兽疫诊断技术

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1 Scope

GB/T 27982-2026 is the Chinese national standard covering diagnosing PPR in sheep and goats - a morbillivirus that kills most of the animals it infects and that is the subject of a global eradication programme. It replaces GB/T 27982-2011 and has been in force since 1 September 2026. It was issued on 27 February 2026 and has been in force since 1 September 2026, replacing GB/T 27982-2011. 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 clinical diagnosis, sample collection, preservation and transportation, virus isolation and identification, RT-PCR method, and fluorescence method for peste des petits ruminants (PPR). Technical requirements for RT-PCR, blocking ELISA, competitive ELISA, and antibody colloidal gold detection methods. This document applies to the diagnosis, surveillance, and epidemiological investigation of peste des petits ruminants (PPR) in goats, sheep, wild ruminants, and other susceptible animals. Inspection and quarantine.

4.Abbreviations The following abbreviations apply to this document. CPE. Cytopathic effect Ct. Cyclethreshold FAM. 6-Carboxyfluorescein OD. Optical Density RNA. Ribonucleic acid TAE. Tris-Aceticacid-EDTA buffer VIC. 2'-Chloro-7'-1,4-Dichloro-6-carboxyfluorescein

5.Biosafety Measures When performing laboratory activities for the diagnosis of suspected peste des petits ruminants (PPR), such as sample processing, virus isolation, nucleic acid extraction and amplification, and serum testing, the following procedures should be followed. Perform according to GB 19489.Virus isolation and culture shall be carried out in a biosafety level 3 (BSL-3) laboratory.

6.1 Epidemiology

6.1.1 Ruminants are generally susceptible, with no obvious seasonality or age-related differences. Goats and sheep are typical hosts, with goats generally being more susceptible than sheep. Susceptible. Among wild animals, bovines are the most susceptible. Camels, pigs, and many other animals are atypical hosts.

6.1.2 The main sources of infection are sick and dead goats, sheep, and wild ruminants.

6.1.3 The main route of infection is through the respiratory tract, spreading over short distances via aerosols produced by sneezing and coughing; infection can also occur through direct contact. The virus can be transmitted through animals or their secretions and excrement, or through contact with bedding, feed, etc., contaminated with the virus.

6.1.4 High morbidity and mortality rates, with morbidity and mortality rates reaching over

90%; some patients die acutely without obvious symptoms.

6.2 Clinical Symptoms

6.2.1 Sudden onset of fever, with body temperature reaching 40°C~42°C on the 2nd to 3rd day. The fever lasts for about 3 days. In acute cases, the fever begins at the onset of fever. Death occurs within 4 to 6 days. Subclinical cases have milder symptoms and may recover within 10 to 14 days after onset.

6.2.2 Diarrhea begins 2-3 days after the onset of fever, accompanied by severe dehydration, weight loss, and collapse. Pregnant ewes may experience abortion.

6.2.3 A large amount of discharge comes from the eyes and nose, initially watery, increasing in volume as the disease progresses, becoming purulent, then drying out, and emitting a foul odor. It has a foul odor. Symptoms usually include sneezing and coughing, shortness of breath, and difficulty breathing.

6.2.4 The oral mucosa is congested, and numerous necrotic spots and ulcers appear on the oral epithelium and nasal mucosa. After the necrotic tissue sloughs off, it forms well-defined lesions. Superficial erosions. Epithelial damage appears on the surface of the lips, gums, dental lamina, tongue, and vulva of the ewe, with excessive salivation in the oral cavity.

6.3 Necropsy lesions

6.3.1 Severe congestion was observed in the upper respiratory tract mucosa, accompanied by ulcers in the nasal cavity and tracheal mucosa.

6.3.2 Bronchopneumonia and apical pneumonia appeared in the lungs.

6.3.3 Severe congestion and ulceration of the digestive tract mucosa. Intestinal congestion is most commonly limited to the duodenum, ileum, cecum, and upper colon, and occasionally... Diffuse congestion was observed throughout the intestines; hemorrhage at the ileocecal valve was common; severe hemorrhage occasionally occurred at the top of the longitudinal folds of the large intestine, forming a zebra-like appearance. stripe.

6.3.4 Mildly enlarged and edematous mesenteric lymph nodes, swollen and edematous pulmonary lymph nodes, and swollen spleen.

6.4 Clinical assessment Meeting the epidemiological characteristics outlined in 6.1, exhibiting any of the clinical symptoms described in

6.2 or any of the necropsy lesions described in 6.3, and not yet diagnosed with any other disease. This can be preliminarily identified as a suspected case of peste des petits ruminants (PPR).

7.1 Sample Collection

7.1.1 Collect one swab each from the eyes, nose, mouth, and anus of suspected diseased animals, and preserve them in 1 mL of sterile

0.01 mol/L PBS or similar solution. Store in liquid. Aseptically collect 5-10 mL of whole blood and separate the serum.

7.1.2 Select infected animals that have just been culled or have died within 24 hours to collect tissue samples. Collect mesenteric lymph nodes aseptically from each infected animal. Three to four portions each of the tracheal and bronchial lymph nodes, and approximately 10 to 20 grams each of diseased tissues from the spleen, intestines, and lungs, were placed in sample preservation tubes (bags).

7.2 Sample Preservation and Transportation

7.2.1 Sample collection and transportation shall comply with the provisions of NY/T 541.Sample packaging shall be leak-proof, seepage-proof, and spill-proof, and puncture-proof shall be avoided. damage.

7.2.2 Samples should be stored at 4°C for no more than 24 hours. If long-term storage is required, they should be stored at -70°C or below, and the freeze-thaw cycle should not exceed 3 times.

8.1 Instruments and Equipment

8.1.1 Biosafety cabinet.

8.1.2 Cell incubator.

8.1.3 Inverted microscope.

8.1.4 Benchtop low-temperature high-speed centrifuge.

8.1.5 Grinding machine.

8.1.6 Cell culture flasks.

8.2 Reagents and Materials

8.2.1 Vero-derived cells expressing canine SLAM, African green monkey kidney cells, or primary lamb kidney/lung cells. 8.2.2

0.01 mol/L PBS. Prepared according to A.1 in Appendix A.

8.2.3 DMEM cell culture medium. Prepared according to A.2.

8.2.4 DMEM cell maintenance medium. Prepared according to A.3.

8.3 Operating Procedures