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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 19915-2026

Replacing GB/T 19915.1-2005

Diagnostic techniques for swine streptococcosis

猪链球菌病诊断技术

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1 Scope

GB/T 19915-2026 is the Chinese national standard covering diagnosing Streptococcus suis

in pigs - the isolation and identification, the serotyping and the molecular detection, on a disease that also infects the people who handle infected animals. It replaces GB/T 19915.1-2005 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 19915.1-2005. 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 symptoms and necropsy findings of streptococcal disease in pigs, sample collection, preservation and transportation, pathogen isolation and identification, and fluorescence. The diagnostic methods, including PCR testing and triple PCR testing for Streptococcus suis types 2, 7, and 9, specify comprehensive judgment requirements. This document applies to the diagnosis, quarantine, and epidemiological investigation of streptococcal disease in pigs.

4.Abbreviations The following abbreviations apply to this document. BHQ. Black Hole Quencher Ct. CycleThreshold THB. Todd-Hewitt Broth 6-FAM. 6-CarboxyFluorescein

5.Biosafety Measures The isolation and identification of the pathogen of streptococcal disease in swine should be carried out in a biosafety level 2 (BSL-2) laboratory in accordance with GB 19489.

6.1 Epidemiology

6.1.1 It can occur year-round, but is more common in hot and humid seasons. Clinically, there are multiple serotypes of Streptococcus suis, and infections with Streptococcus suis are also observed. Mixed infection with other pathogens.

6.1.2 Pigs of different ages, breeds and sexes can be infected.

6.1.3 Sick pigs, carrier pigs, and dead pigs are the main sources of infection.

6.1.4 It is mainly transmitted through the respiratory tract, wounds, and digestive tract.

6.2 Clinical Symptoms

6.2.1 In the most acute form, the body temperature of the pig can reach above 42°C. When touched, the pig will cry out, its skin will turn bluish-purple, and it will die suddenly.

6.2.2 Acute cases in pigs present with a body temperature between 41°C and 43°C; widespread congestion and redness are observed on the head, neck, back, lower abdomen, and inner sides of the limbs. Purpura; neurological symptoms such as ataxia, circling, convulsions, swimming-like movements of the limbs, or coma; shortness of breath or difficulty breathing, with wheezing audible. Silence.

6.2.3 In chronic cases, the joints of the affected pigs are swollen and painful, causing

lameness or inability to stand; the lymph nodes are swollen and hardened.

6.3 Pathological Changes During Autopsy

6.3.1 Pleural effusion, pulmonary hemorrhage, epicardial hemorrhage; fibrinous pneumonia, pericarditis.

6.3.2 Kidney and lymph node hemorrhage, splenomegaly.

6.3.3 Cerebral congestion and increased cerebrospinal fluid.

6.3.4 Joint swelling, suppuration, or degeneration and hyperplasia of the joint capsule tissue, congestion within the capsule, and turbid synovial fluid.

6.4 Result Determination Patients meeting the criteria in

6.1 and exhibiting the clinical symptoms described in

6.2 and the pathological changes observed during necropsy in

6.3 can be considered suspected cases of streptococcal infection in pigs. A definitive diagnosis should be made... Samples were collected for laboratory testing.

7.1 Instruments and Equipment

7.1.1 Scalpels, scissors, forceps, tissue homogenizers, mouth openers, tonsil collectors, syringes, etc.

7.1.2 Containers. Vacuum blood collection tubes (containing EDTA anticoagulant), centrifuge tubes (2mL, 10mL), self-sealing bags, sample preservation tubes, etc.

7.1.3 Personal protective equipment. protective clothing, protective goggles, protective caps, protective boots, masks, gloves, etc.

7.1.4 Sampling record supplies. sampling form, marker, waterproof label, etc.

7.1.5 Others. swabs, medical gauze, sealing film, etc.

7.2 Reagents and Materials 7.2.1

0.01 mol/L PBS (pH 7.2), prepared according to Appendix A, A.1.

7.2.2 Selective THB enrichment broth, prepared according to A.2.

7.3 Sample Collection and Processing

7.3.1 Sample Selection Samples such as joint fluid and anticoagulated blood can be collected from diseased pigs; tissues such as lymph nodes, brain, lungs, and spleen can be collected from dead pigs or from diseased pigs after necropsy. sample.

7.3.2 Joint fluid sample Collect joint fluid with a syringe, put it into a sample preservation tube, seal it, number it, and record it.

7.3.3 Anticoagulated blood samples Collect 5 mL of blood through the marginal ear vein using a vacuum blood collection tube (containing EDTA anticoagulant), seal it, number it, and record the results.

7.3.4 Tissue Samples Collect tissue samples from lymph nodes, brain, lungs, spleen, etc., using sterile scissors and forceps. Place them in self-sealing bags or sample preservation tubes, seal them, and label them. Good record.

7.4 Sample preservation, packaging and transportation Sample preservation, packaging, and transportation shall be carried out in accordance with the provisions of NY/T 541.

8.1 Instruments and Equipment

8.1.1 Class II biosafety cabinet.

8.1.2 Homogenizer or tissue grinder.

8.1.3 Electronic balance. sensitivity is 0.001g.

8.1.4 Incubator. Can be used for 37°C incubation.

8.1.5 Refrigerator (4°C, -20°C, -40°C and below).

8.1.6 Upright optical microscope (oil immersion).

8.2 Reagents and Materials

8.2.1 Unless otherwise specified, all reagents used are of analytical grade. 8.2.2

0.01 mol/L PBS (pH 7.2), prepared as in 7.2.1.

8.2.3 Selective THB enrichment broth, prepared in the same way as 7.2.2.

8.2.4 Selective THB sheep blood plate, prepared according to A.3.

8.2.5 Commercially available Gram staining solutions.

8.3 Test Procedure

8.3.1 Isolation of pathogens from tissues Aseptically, 0.1g of tissues from lymph nodes, brain, lungs, spleen, etc., were taken and homogenized in.200μL of 0.01mol/L PBS (pH 7.2). Add the homogenate to a test tube containing 5 mL of sterile selective THB enrichment broth, incubate at 37°C for 8-10 hours, then streak inoculate onto the selected culture medium. Selective THB sheep blood agar plates were incubated at 37°C for 10 hours; if colony growth was slow, the incubation period could be extended to 20 hours for observation. For liquid culture, samples were picked... Single colonies were inoculated with