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Diagnostic techniques for animal anthrax

动物炭疽诊断技术

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the 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: Beijing Animal

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Anthrax is an acute, febrile, septicemic zoonotic disease caused by *Bacillus anthracis*. The disease is widely distributed throughout the world. The disease mainly occurs among livestock, with herbivores such as cattle, sheep, and horses being the most susceptible, followed by omnivores. The disease is mainly transmitted through contact with animals infected with anthrax or contaminated animal products or environmental infection. Animal infection with anthrax is mainly divided into the most acute type, acute There are three clinical types. acute, subacute and chronic. Each type has a high mortality rate and poses a serious threat to human and animal health. World Organization for Animal Health (WOAH) lists it as a reportable animal disease, and my country lists it as a Category II animal disease. This document was prepared with reference to Chapter

3.1.1 of the WOAH Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (2023 Edition). technology, and combined with the new research results of related technologies in my country. Diagnostic Techniques for Anthrax in Animals

1 Scope

GB/T 45101-2024 gives the diagnostic techniques for anthrax in animals. Anthrax is a Class A notifiable disease in China and a zoonosis with a long history of human cases arising from handling infected carcasses, and its spores persist in soil for decades, so an outbreak is a permanent contamination of the pasture as well as an animal loss. It is also one of the few diagnoses where the laboratory procedure is itself dangerous, and the standard begins with the biosafety measures for that reason. It then covers the clinical diagnosis - the epidemiological features, clinical signs, pathological changes and the interpretation of them - the collection, storage, transport and processing of samples, and the laboratory diagnosis: stained microscopy, isolation and identification, the Ascoli precipitin test, PCR and real-time fluorescent PCR, followed by the comprehensive judgement, with annexes giving the media and reagents, the primers and probes and the expected amplification results. It takes effect on 1 July 2025.

This document describes the clinical diagnosis, staining and microscopy, isolation and identification, gamma phage lysis test, penicillin inhibition test, Laboratory diagnostic methods such as PCR, Real-time PCR, and ring precipitation test. This document applies to the diagnosis, detection, quarantine, surveillance and epidemiological investigation of anthrax in animals.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this text, among which the dated references For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB 19489 General requirements for laboratory biosafety

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Abbreviations

The following abbreviations apply to this document. Ct value. Cycle Threshold
FAM.6-Carboxy-Fluorescein NFQ-MGB. Non-Fluorescent Quencher-Minor Groove Binder
PLET. Polymyxin B-Lysozyme-EDTA-Thalousace- tateAgar) TAE. Tris-Acetate-EDTA Buffer

5 Biosafety measures

It is strictly forbidden to perform autopsies on animals suspected of having anthrax or on animals that have been infected with anthrax under non-biosafety conditions. Necessary protective measures should be taken to prevent infection of personnel and contamination of the environment. Laboratories engaged in anthrax diagnosis should follow the Provisions are made for risk assessment and risk control.