

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

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**Identification of Mycobacterium tuberculosis complex at
frontier port**

**国境口岸结核分枝杆菌复合群鉴定方法
(English Translation)**

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Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Abbreviations
- 5 Biosecurity measures

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard is proposed and managed by the National Certification and Accreditation Administration.

This standard was drafted. Shanghai Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China.

Introduction

In recent years, new technologies for tuberculosis laboratory diagnosis have emerged, achieving rapid and accurate detection of *Mycobacterium tuberculosis* and its drug resistance.

Standard. At present, China is conducting tuberculosis diagnosis based on the "WS288-2008 diagnostic criteria for tuberculosis", in which the laboratory diagnosis of tuberculosis remains the main it relies on sputum smear microscopy and traditional solid culture. Microscopy is less sensitive and cannot distinguish between active and inactive the organism cannot identify the type of mycobacteria. On traditional solid media, the growth of *Mycobacterium tuberculosis* takes up to eight weeks, reporting time long. In the absence of timely diagnosis, appropriate treatment is delayed. At the same time, laboratories need fast and inexpensive methods of culture identification.

It is used to distinguish between *Mycobacterium tuberculosis* complex and non-tuberculous mycobacteria. WHO's standards for the diagnosis of tuberculosis continue to improve, the proper integration of new technologies and methods into diagnostic protocols is one of the prerequisites for the effective adoption of new diagnostic methods.

Based on the full evaluation, this standard regulates the application path of *M. tuberculosis*

laboratory identification technology and comprehensive judgment scheme.

Through the adoption of new technologies, the prevention and control efficiency of tuberculosis at border ports has been improved.

Identification method of Mycobacterium tuberculosis complex group at border port

1 Scope

This standard specifies the biosafety requirements, identification procedures, identification methods, and results reports for the identification of Mycobacterium tuberculosis complexes at border ports.

And so on.

This standard is applicable to the detection and identification of the infection of Mycobacterium tuberculosis complexes at the border ports.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB 19489 General requirements for laboratory biosafety Tuberculosis Laboratory Biosafety Handbook World Health Organization List of pathogenic microorganisms transmitted by humans

3 Terms and definitions

The following terms and definitions apply to this document.

Mycobacterium tuberculosis complex; MTC A group of pathogenic bacteria of infectious tuberculosis, including Mycobacterium tuberculosis, Mycobacterium tuberculosis, Mycobacterium vaccae, African branching rods bacteria. The bacteria of MTC are rod-shaped, the size of the bacteria is $0.6\mu\text{m} \times (1\mu\text{m} \sim 4\mu\text{m})$, positive for acid-fast staining and positive for Gram stain. Slow growth Slow, about 10h breeding generation, according to the amount of inoculation, colony growth can be seen in the naked eye for 10d~30d. Lowenstein-Jensen culture the colonies on the base are rough and dense, and are granules, nodules, or cauliflower-like, milky or beige, and opaque.

4 Abbreviations

The following abbreviations apply to this document.

PAGE (polyacrylamide gel electrophoresis). polyacrylamide gel electrophoresis TBE (Tris-Boricacid). Tris-boric acid nucleic acid running buffer Bp(basepair). base pair

5 Biosecurity measures

According to the requirements of the WHO Tuberculosis Laboratory Biosafety Manual and GB 19489 and the List of Pathogenic Microorganisms Infected by Humans, the biosafety requirements for the identification and identification of materials for mycobacterial complexes are as follows.

--- Sample processing and testing should be carried out in Biosafety Level 2 (BSL-2) laboratories, in Class IIA or above biosafety cabinets;

--- A large number of live bacteria operations, such as culture identification, drug sensitivity testing, etc., should be in the biosafety level 3 (BSL-3) laboratory or tuberculosis protection Performed in a biological safety cabinet in the laboratory. The tuberculosis protection laboratory refers to the experiment based on the biosafety secondary laboratory.