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

GB/T 18936-2025

Replacing GB/T 18936-2020

Diagnostic techniques for avian influenza

禽流感诊断技术

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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 is required. This document replaces GB/T 18936-2020 "Diagnostic technology for highly pathogenic avian influenza" and integrates GB/T 19438.1-2004 "Avian influenza GB/T 19438.2-2004 "Universal fluorescent RT-PCR detection method for H5 subtype avian influenza virus" GB/T 19438.3-2004 "Fluorescence RT-PCR Detection Method for H

7 Subtype Avian Influenza Virus", GB/T 19438.4-2004 "H9 GB/T 19439-2004 "A fluorescent RT-PCR test method for detecting H5 subtype avian influenza virus" and GB/T 19439-2004 "A NASBA test method for detecting H5 subtype avian influenza virus" Compared with GB/T 18936-2020, except for the conclusion In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) The scope of application of the standard has been changed to expand the diagnostic technology of highly pathogenic avian influenza to avian influenza technology (see Chapter 1, 2020 edition). Chapter 1);
- b) Deleted the specific contents of terms and definitions (see Chapter 3 of the 2020 edition);
- c) Added abbreviations (see Chapter 4);
- d) increased biosafety measures (see Chapter 5);
- e) Some contents of clinical diagnosis have been changed (see Chapter 6, Chapter 4 of the 2020 edition);
- f) Added technical requirements for sample storage and transportation, and added technical requirements for the collection of down, feather and cowhide samples (see

Chapter 7);

g) Added technical requirements for the processing of down, feather and cowhide samples (see 8.1.3);

h) The content of "Comprehensive Determination" has been changed (see Chapter 9, Chapter 10 of the 2020 edition);

i) The preparation of sample diluent has been changed (see Appendix A, Appendix A of the 2020 edition);

j) Adjust the IVPI determination test from an informative appendix to a normative appendix (see Appendix B, Appendix B of the 2020 edition). 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/TC 181). This document was drafted by: Harbin Veterinary Research Institute, Chinese Academy of Agricultural Sciences, China Customs Science and Technology Research Center, China Animal Health and Epidemiology Center, Shanghai Customs Animal, Plant and Food Inspection and Quarantine Technical Center. The main drafters of this document are. Wang Xiurong, Tian Guobin, Liu Huan, Liu Hualei, Li Jian, Gao Zhiqiang, Jiang Wenming, Shi Xiju, Deng Guohua, Shi Jianzhong, Zeng Xianying, Li Yanbing, Wu Jianan, Gu Qiang, Sun Xiaodong, Chen Hualan. The previous versions of this document and the documents it replaces are as follows: --First published as GB/T 18936-2003 in 2003 and first revised in 2020; --This is the second revision, incorporating GB/T 19438.1~19438.4-2004, GB/T 19439-2004, GB/T 19440- 2004 related technical content.

Avian influenza (AI) is a disease mainly caused by avian influenza virus (AIV). infection and/or disease syndrome. AIV belongs to the genus influenza A virus of the family Orthomyxoviridae. The International Committee on Taxonomy of Viruses (ICTV) revised it to alpha influenza virus in 2019. Influenza A virus is the only orthomyxovirus known to infect poultry. There are 16 HA subtypes (H1-H16) and 9 NA subtypes isolated from poultry. NA subtype (N1~N9); there are also newly confirmed subtypes from bats (H17 and H18). AIV is divided into high pathogenicity, Highly pathogenic avian influenza virus (HPAIV) and low pathogenic avian influenza virus (Low pathogenic avian influenza virus) HPAIV is a type of influenza virus that causes acute clinical symptoms in chickens, turkeys, and other commercial poultry. All are H5 or H7 subtypes. Not all H5 or H7 subtypes are highly pathogenic. Some H5 and H7 subtype influenza viruses are pathogenic. HPAI is not highly pathogenic, but there is a risk that these viruses will mutate into highly pathogenic viruses. And LPAIV may suddenly increase its virulence in poultry or may be naturally transmitted to humans and cause serious consequences. pathogenic avian influenza (LPAI) is listed as a notifiable animal disease. AIV has a wide range of hosts. Chickens, turkeys, ducks, geese,

quails, pheasants, partridges, ostriches, peacocks and many other poultry are susceptible. Many wild birds may also be susceptible. Infection may lead to illness or even death; mammals such as pigs, dairy cows, dogs, cats, minks, red foxes, wolves, sea lions, seals, etc. are occasionally infected. Poultry and wild birds are AIV The main host of the disease is poultry, which is most affected by the epidemic and closely related to people's livelihood and trade. Therefore, the clinical symptoms and autopsy changes described in this document are AIV is a single-stranded, negative-stranded, segmented RNA virus, and its genes are prone to mutation, which can mutate into new influenza virus variants. Therefore, for RT-PCR test methods and real-time fluorescence RT-PCR test methods, only some common HA and NA subtype primers. If new variants or other subtypes (such as H3) are to be identified, corresponding primers need to be designed for detection. The revision of this document refers to the WOAHA Manual of Diagnostic Tests and Vaccines for Terrestrial Animals and combines the latest developments in relevant technical research in my country. Results. Avian Flu Diagnostic Technology

1 Scope

GB/T 18936-2025 is the Chinese national standard on diagnostic techniques for avian influenza, in the field of health care technology. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 24 January 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 August 2025. Classification: ICS 11.220, CCS B41. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the clinical diagnosis of avian influenza virus (AIV) infection, sample collection, storage and transportation, and virus isolation and identification. Laboratory diagnostic methods such as hemagglutination (HA) and hemagglutination inhibition (HI) tests, RT-PCR methods, and real-time fluorescence RT-PCR methods are specified. Requirements for biosafety measures. This document applies to the diagnosis of AIV and the detection of AIV in products, including but not limited to poultry, down, feathers, beef, milk, and hides.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. 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. AI. Avian Influenza AIV. Avian Influenza Virus Ct. Cycle Threshold DEPC. Diethyl Pyrocarbonate HA. Hemagglutination HI. Hemagglutination inhibition HPAI. Highly Pathogenic Avian Influenza HPAIV. Highly Pathogenic Avian Influenza Virus IVPI. Intravenous Pathogenicity Index LPAI. Low Pathogenic Avian Influenza LPAIV. Low Pathogenic Avian Influenza Virus PBS. Phosphate Buffered Saline PCR. Polymerase Chain Reaction RNA. RiboNucleic Acid RT-PCR. Reverse Transcription-Polymerase Chain Reaction SPF. Specific Pathogen Free