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

GB/T 16550-2020

Replacing GB/T 16550-2008

Diagnostic techniques for newcastle disease

新城疫诊断技术

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Abbreviations
- 4 Clinical diagnosis

Foreword

This standard was drafted in accordance with the rules given in GB/T 1:1-2009: This standard replaces GB/T 16550-2008 "Newcastle Disease Diagnostic Technology", and compared with GB/T 16550-2008, the main technical changes as follows:

---Modified the determination results of hemagglutination and hemagglutination inhibition test (see 7:3 and 7:4, 5:3 and 6:3 of the:2008 edition);

--- Deleted MDT and IVPI in the virulence evaluation index (see 4:3 and 4:4 in the:2008 edition);

--- Added real-time fluorescent RT-PCR detection method (see Chapter 9): Please note that certain contents of this document may involve patents: The issuing agency of this document is not responsible for identifying these patents: This standard was proposed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China: This standard is under the jurisdiction of the National Animal Health Standardization Technical Committee (SAC/TC181): This standard was drafted: China Animal Health and Epidemiology Center, Yangzhou University: The main drafters of this standard: Liu Hualei, Wang Jingjing, Yu Xiaohui, Lu Yan, Wu Yantao, Hu Shunlin, Zheng Dongxia, Zhao Yunling, Liu Wenbo, Liu Xiufan and Wang Zhiliang: The previous versions of the standard replaced by this standard are as follows:

---GB 16550-1996, GB/T 16550-2008:

Newcastledisease (ND) is a virulent strain of Newcastledisease virus (NDV) that infects poultry It caused an acute and severe infectious disease, causing huge economic losses to the world's poultry industry: The World Organization for Animal Health (OIE) will Listed as a statutory animal disease, the Ministry of Agriculture and Rural Affairs of my country has listed it as a type of animal disease: Newcastle disease virus can infect more than 240 kinds of poultry, among which domestic chickens and guinea fowls are the most susceptible: Source of infection: The Newcastle disease virus is mainly transmitted through the digestive tract and respiratory tract: Contaminated water, feed, egg trays (boxes), breeding eggs, chicken embryos and poisoned wild Live birds, insects and related

personnel can all become transmission media: Newcastle disease virus belongs to Paramyxoviridae (Paramyxoviridae), Orthoavulavirus (Orthoavulavirus): The epidemic virus has only one serotype, but it can be divided into multiple genotypes: OIE stipulates that Newcastle disease is caused by a virulent strain of Newcastle disease virus in poultry Infection, therefore, for the diagnosis of Newcastle disease, in addition to identifying the Newcastle disease virus, it is also necessary to evaluate its pathogenicity: For pathogenicity assessment The estimation method can be determined by the 1-day-old SPF chicken ICPI, or molecular biology techniques, such as RT-PCR combined with sequence determination Wait: According to the partial sequence (47nt-420nt) of the F gene of Newcastle disease virus, the Newcastle disease virus can be divided into Class I and Class II: Among them, Class I is an attenuated strain in China: Therefore, the detection method for Class I NDV has no diagnostic significance: The diagnostic methods involved are all against the virulent strain of ClassII Newcastle Disease: Newcastle disease diagnosis technology

1 Scope

GB/T 16550-2020 is the Chinese national standard on diagnostic techniques for newcastle disease, 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 14 December 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 14 December 2020. 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 standard specifies the clinical diagnosis of Newcastle disease, virus isolation and identification, hemagglutination and hemagglutination inhibition tests, reverse transcription polymerase chain reaction (RT-PCR) and real-time fluorescent RT-PCR (Real-timeRT-PCR) technical requirements: This standard is applicable to the diagnosis, quarantine, detection, surveillance and epidemiological investigation of Newcastle disease:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article Pieces: For undated references, the latest version (including all amendments) applies to this document:

GB 19489 Laboratory Biosafety General Requirements

NY/T 541 Technical Specification for Collection, Storage and Transportation of Veterinary

Diagnostic Samples

NY/T 1948 General Rules of Biosafety Requirements for Veterinary Laboratories

3 Abbreviations

The following abbreviations apply to this document: Ct value: The number of cycles (Cyclethreshold) experienced by the amount of fluorescent signal in each reaction tube reaching the set threshold DEPC: Diethyl pyrocarbonate (Diethylpyrocarbonate) HA: Hemagglutinin HI: Haemagglutinationinhibition ICPI: Intracerebralpathogenicityindex (Intracerebralpathogenicityindex) ND: Newcastledisease NDV: Newcastlediseasevirus PBS: Phosphate buffered saline (Phosphatebufferedsaline) RBC: Chicken Red Blood Cell Suspension (Redbloodcel) RNA: Ribonucleic acid (Ribonucleicacid) RT-PCR: Reverse transcription-polymerase chain reaction (Reversetranscription-polymerasechain reaction) Real-timeRT-PCR: Real-time fluorescent RT-PCR (Real-timereversetranscription-polymerasechainreac- tion) SPF: No specific pathogen (Specificpathogenfree)

4 Clinical diagnosis

1 Epidemiology 4:1:

1 The host range is wide, chicken, turkey, quail, pigeon, goose and other poultry and wild birds are susceptible, and ducks can also be infected: 4:1:

2 The source of infection is mainly infected poultry (wild bird) and poisoned poultry (wild bird), which are mainly transmitted through the digestive tract and respiratory tract: Contaminated water, feed, Egg trays (boxes), breeding eggs, chicken embryos, and poisonous wild birds, insects and related personnel can all become the main transmission media: