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

GB/T 22910-2023

Diagnostic techniques for scrapie

痒病诊断技术

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document replaces GB/T 22910-2008 "Scrapie Diagnostic Technology". Compared with GB/T 22910-2008, except for structural adjustment and editing In addition to sexual changes, the main technical changes are as follows:

---Increased the scope of application of histopathological staining, immunohistochemistry and immunoblotting methods (see Chapter 1);

---Changed the description of clinical symptoms (see 6.2, Chapter 2 of the.2008 edition);

---Changed the operating steps of H·E histopathological staining method (see Chapter 8, 3.1 of the.2008 edition) and immunohistochemistry method operation Operation steps (see Chapter 9,

3.2 of the.2008 edition);

---Added immunoblotting method (see Chapter 10). Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is 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 Animal Health Standardization Technical Committee (SAC/TC181). This document was drafted by: China Center for Animal Health and Epidemiology. The main drafters of this document. Liu Yutian, Wang Zhiliang, Sun Chengyou, Zou Yanli, Chi Tianying, Song Fangfang, Yu Xiaojing, Liu Chunju, Ren Weijie, Ge Shengqiang, Xu Tiangang, Zuo Yuanyuan, Wu Xiaodong, Sun Tao, Wang Shushuang. The previous versions of this document and the documents it replaces are as follows:

---First published as GB/T 22910-2008 in.2008;

---This is the first revision.

Scrapie is a progressive, fatal, neurodegenerative disease that occurs naturally in sheep and goats and is caused by prions. Sexually transmitted diseases pose a threat to the health of many animals. The World Organization for Animal Health (WOAH) lists them as animals that seriously affect international trade. One of the epidemic diseases, my country classifies it as a first-class animal disease. Differences in strains and hosts determine the scrapie phenotype. Typical scrapie occurs under natural conditions It has the ability of horizontal transmission and vertical transmission. It mostly occurs in sheep aged 2 to 5 years old. The incubation period is generally 1 to 3 years. The incubation period of goats is average. Less than 1 year old, sheep and goats under 18 months old and over 5 years old are rare. The incubation period of atypical scrapie is significantly longer than that of typical scrapie The incubation period mostly occurs in sheep over 5 years old, and some even occur in sheep over 10 years old. It has sporadic characteristics and does not occur under natural conditions. Ability to spread horizontally and vertically. Most scrapie-affected sheep have typical clinical symptoms, but the diagnosis needs to be combined with laboratory diagnosis. The causative agent of scrapie is animal machinery Isomers of normal prion proteins in the body cannot detect scrapie prion antibodies in the serum of sick sheep, so serological testing is important in the diagnosis of scrapie. Pointless. At present, most laboratory diagnostic methods are aimed at detecting scrapie pathogens, including immunohistochemical methods, Western blot methods, enzyme Linked immunosorbent assay (ELISA) methods, etc., among which the immunohistochemistry method and the western blot method are the WOA "Terrestrial Animal Diagnostics". Methods for diagnosing scrapie as specified in the Test and Vaccine Manual. When the central nervous system of scrapie-affected sheep is invaded by prions, spongy vacuolar degeneration will occur. When the central nervous system is well preserved and does not undergo autolysis, these lesions can be observed using H·E histopathological staining. WOA The "Manual of Terrestrial Animal Diagnostic Tests and Vaccines" stipulates that when using immunohistochemical methods to diagnose scrapie, H·E histopathology should also be used staining method to assist in confirming the diagnosis; when using the immunoblot method to diagnose scrapie, if the sample is suitable for H·E histopathological staining, then H·E histopathological staining was also used to assist in confirming the diagnosis. GB/T 22910-2008 has been released and implemented for more than ten years. It only includes clinical diagnosis, histopathological examination, and immunohistochemistry examination. 3 diagnostic methods, including the immunoblotting method specified by WOA "Manual of Terrestrial Animal Diagnostic Tests and Vaccines". Compared to immunity Histochemical methods and Western blotting methods are more sensitive and specific, and are a better diagnostic method in scrapie diagnostic technology. This revision The added immunoblotting method is based on Chapter

3.7.11 of WOA "Manual of Terrestrial Animal Diagnostic Tests and Vaccines" (2018

Edition) and "UK WOAH Scrapey is formulated with reference to the Laboratory Scrapey Diagnostic Manual. The technical methods are consistent with those recommended by WOAH and can better serve Surveillance of scrapie in my country. Scrape Diagnostic Technology

1 Scope

GB/T 22910-2023 gives the diagnostic techniques for scrapie. Scrapie is the prion disease of sheep and goats, and it is diagnostically unlike anything else: there is no immune response to look for, no organism to culture, and the animal is infectious for years before it shows a sign, so diagnosis rests on detecting the abnormal prion protein itself in brain or lymphoid tissue. China is free of it and intends to remain so, which makes the capability a surveillance measure for imported breeding stock. The standard sets the biosafety measures - prions survive the sterilisation that kills everything else - the clinical diagnosis, the collection and handling of samples, and the laboratory diagnosis by immunohistochemistry, Western blot and ELISA, followed by the comprehensive judgement. It replaces GB/T 22910-2008 and took effect on 1 April 2024.

This document specifies the clinical diagnosis of scrapie and describes H·E histopathological staining, immunohistochemical methods, and Western blotting methods. This document is suitable for the diagnosis, detection, quarantine, surveillance and epidemiological investigation of scrapie.

2 Normative reference documents

This document has no normative references.

3 Terms and definitions

There are no terms or definitions to be defined in this document.

4 Abbreviations

The following abbreviations apply to this document. AEC. 3-amino-9-ethylcarbazole (3-amino-9-ethylcarbazole) PK enzyme. proteinase K (proteinaseK) PrP. prion protein

5 Biosecurity measures

Sample collection and processing, H·E histopathological staining, immunohistochemistry, and Western blotting should be performed at biosafety level II. and above, the experimental steps of tissue homogenization, digestion and denaturation need to be operated under a negative pressure hood.

6 Clinical Diagnosis

6.1 Susceptible animals Sheep and goats, but the susceptibility of sheep is related to polymorphisms in the PrP gene.

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