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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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# GB/T 22992-2008

## Determination of zearalanol, zearalanone, diethylstilbestrol, hexestrol and dienoestrol multi-residues in milk and milk powder - LC-MS-MS method

牛奶和奶粉中玉米赤霉醇、玉米赤霉酮、己烯雌酚、己烷雌酚、双烯雌酚残留量的测定 液相色谱-串联质谱法

**Issued on: December 31, 2008** **Implemented on: May 1, 2009**

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**Standardization Administration of China**

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## Foreword

The Standard Appendix A, Appendix B is an informative annex. This standard is proposed and managed by the State Administration of Quality Supervision Inspection and Quarantine of People's Republic of China. This standard was drafted. People's Republic of China Exit Inspection and Quarantine Qinhuangdao, Tianjin, People's Republic of China Entry-Exit Inspection and Quarantine Bureau. The main drafters of this standard. Xu Hong, Wu Yanhui, He Jia, Zhang Jun, Zhang Man, Lin Anqing, Pang Guofang. Milk and milk powder zeranol, Zearalanone, Diethylstilbestrol, hexestrol, double diethylstilbestrol Determination of residues Liquid chromatography - tandem mass spectrometry

## 1 Scope

GB/T 22992-2008 is the Chinese national standard on determination of zearalanol, zearalanone, diethylstilbestrol, hexestrol and dienoestrol multi-residues in milk and milk powder - lc-ms-ms method. 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 31 December 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2009. Classification: ICS (ICS) , CCS X04. 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 milk and milk powder zeranol (zearalanol), Zearalanone (zearalanone), diethylstilbestrol (dieth- ylstilbestrol), hexoestrol (hexestrol), double diethylstilbestrol (dieno-estrol) residual amount of liquid chromatography - tandem mass spectrometry. This standard is used for milk and milk powder zeranol, Zearalanone, diethylstilbestrol, hexoestrol, double diethylstilbestrol residues determination. The standard method detection limit. milk zeranol, Zearalanone, hexane estrone, diethylstilbestrol and diethylstilbestrol double was 1.0μg/L; Milk powder zeranol, Zearalanone, hexane estrone,



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diethylstilbestrol and diethylstilbestrol double to 8.0μg/kg.

## 2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 6379.1 measurement methods and results of Accuracy (trueness and precision) - Part 1. General principles and definitions ( GB/T 6379.1-2004, ISO 5725-1.1994, IDT)

GB/T 6379.2 measurement methods and results of Accuracy (trueness and precision) - Part 2. Determine the standard measurement method to repeat Of the basic methods of reproduction ( GB/T 6379.2-2004, ISO 5725-2.1994, IDT)

GB/T 6682 analytical laboratory use specifications and test methods ( GB/T 6682-2008,

ISO 3696. 1987, MOD) Principle

3 Protein precipitation with acetonitrile as the extraction agents and extraction agent, an anionic SPE purification by liquid chromatography - tandem mass spectrometry Determination of internal standard.

## 4 Reagents and materials

Unless otherwise indicated, the reagents used were of analytical grade.

4.1 Water. GB/T 6682, level.

4.2 Methanol. chromatographically pure.

4.3 acetonitrile. chromatography.

4.5 formic acid.

4.6 sodium hydroxide. 4.7 5mol/L sodium hydroxide solution. Weigh 200g of sodium hydroxide, distilled water volume to 1L.

4.8 eluent. ammonia - water (1 + 19).

4.9 eluent. formic acid - methanol (1 + 19).

4.10 hormone and metabolite standards materials. zeranol (including alpha- corn gibberellic alcohol beta- zeranol, each 50%) purity of greater than or equal At 97%; Zearalanone, purity not less than 97%; diethylstilbestrol, purity not less than 99%; hexoestrol purity of greater than or equal



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