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

GB/T 21542-2025

Replacing GB/T 21542-2008

**Determination of enramycin in feeds - Liquid
chromatography-tandem mass spectrometry**

饲料中恩拉霉素的测定 液相色谱-串联质谱法

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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 21542-2008 "Determination of Enramycin in Feed - Microbiological Method" and is in compliance with GB/T 21542-2008.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1 of the 2008 edition);
- b) Microbiological methods (see Chapters 3 to 10 and Appendix A of the 2008 edition) have been deleted;
- c) Liquid chromatography-tandem mass spectrometry has been added (see Chapters 4 to 10).

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 is proposed and coordinated by the National Feed Industry Standardization Technical Committee (SAC/TC 76).

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The previous versions of this document and the documents it replaces are as follows.

--First published in 2008 as GB/T 21542-2008; --This is the first revision.

Determination of Enramycin in Feed Liquid chromatography-tandem mass spectrometry

1 Scope

This document describes a method for the determination of enramycin in feed by liquid chromatography-tandem mass spectrometry.

This document applies to Enramyces in compound feeds, concentrated feeds, concentrate supplements, additive premixes and mixed feed additives Determination of enramycin (calculated as the sum of enramycin A and enramycin B).

In this document, the detection limits of enramycin A and enramycin B are both 0.05 mg/kg, and the quantification limits are both 0.10 mg/kg.

2 Normative references

GB/T 6682

GB/T 20195

3 Terms and Definitions

There are no terms or definitions that require definition in this document.

4 Principles

The analytes in the sample were extracted with a methanolic hydrochloric acid solution or a methanolic formic acid solution, cleaned up with a solid phase extraction column, and measured by liquid chromatography-tandem mass spectrometry.

Quantification was performed by matrix-matched external standard method.

5 Reagents or materials

Unless otherwise specified, only analytical grade reagents were used.

5.1 Water. GB/T 6682, Grade 1.

5.2 Methanol. chromatographic grade.

5.3 Formic acid. chromatographic grade. 5.4 Ethyl acetate.

5.5 Hydrochloric acid solution (0.1 mol/L). Take 4.2 mL of hydrochloric acid, dilute to 500 mL with water, and mix thoroughly.

5.6 Hydrochloric acid methanol solution. Pipette 55 mL of methanol and 45 mL of hydrochloric acid solution (5.5) and mix well.

5.7 2% formic acid methanol solution. Pipette 2 mL of formic acid, dilute to 100 mL with methanol, and mix thoroughly.

5.8 5% ammonia solution. Pipette 5 mL of ammonia solution, dilute to 100 mL with water, and mix thoroughly.

5.9 Methanol-ammonia solution. Pipette 20 mL of methanol and 80 mL of 5% ammonia water (5.8) and mix well.

5.10 1% formic acid in ethyl acetate. Pipette 1 mL of formic acid, dilute to 100 mL with ethyl acetate, and mix by ultrasonication.