NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 23200.125-2026

National food safety standard-Determination of kasugamycin

食品安全国家标准 植物源性食品中春雷霉素、井冈霉素、宁南霉素、多抗霉素残留量的测定 液相色谱—质谱联用法

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Foreword

This document was issued on 12 February 2026 by the the National Health Commission of the People's Republic of China, Ministry of Agriculture and Rural Affairs of the People's Republic of China, Standardization Administration of the People's Republic of China and takes effect on 1 March 2026.

It is a GB standard without the /T suffix: compliance is mandatory in China.

The document runs to 15 pages in translation. The identification, the dates, the table of contents and the clauses reproduced on this page are taken from the standard itself.

GB 23200.125-2026 National food safety standard-Determination of kasugamycin, jinggangmycin, ningnanmycin and polyoxin residues in foods of plant origin-Liquid chromatography-tandem mass spectrometry method English, Anglais, Englisch, Inglés, ???

National food safety standard - Determination of kasugamycin, jinggangmycin, ningnanmycin and polyoxin residues in foods of plant origin - Liquid chromatography-tandem mass spectrometry method

National Food Safety Standard - Determination of residues of kasugamycin, jinggangmycin, ningnanmycin and polyoxin in plant-derived foods - Liquid chromatography?mass spectrometry method

1 Scope

GB 23200.125 is the Chinese national food safety method for four agricultural antibiotics, kasugamycin, jinggangmycin (validamycin), ningnanmycin and polyoxin, in plant-derived foods, by liquid chromatography-mass spectrometry. These are biological pesticides used heavily on rice and vegetables in China and much less elsewhere, so they fall outside the

international multi-residue screens and need a method of their own; they are also highly polar, which is why the ordinary extraction and clean-up do not work for them. The document describes the extraction, the clean-up, the LC-MS determination and the quantification, and carries the reagents, the apparatus, the sample preparation, the analytical procedure, the calculation of results, the precision and the limit of quantification. It is a companion to GB 2763, which sets the limits this method is used to check.

This document specifies the liquid chromatography?mass spectrometry method for the determination of residues of kasugamycin, jinggangmycin, ningnanmycin and polyoxin in plant-derived foods.

This document applies to the determination of residues of kasugamycin, jinggangmycin, ningnanmycin and polyoxin in plant-derived foods.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative reference. For dated references, only the edition cited applies. For undated references, the latest edition (including all amendments) applies.

GB 2763-2026 National Food Safety Standard - Maximum residue limits for pesticides in food

GB/T 6682 Water for analytical laboratory use - Specification and test methods

3 Principle

The test sample is extracted with formic acid aqueous solution, purified by a hydrophilic?lipophilic balanced solid phase extraction column and a mixed?mode cation exchange solid phase extraction column, detected by liquid chromatography?tandem mass spectrometry, and quantified by the external standard method.

4 Reagents and materials

Unless otherwise stated, only analytically pure reagents and Grade 1 water complying with GB/T 6682 shall be used in the analysis.

4.1 Reagents

4.1.1 Acetonitrile (CH3CN, CAS No.: 75-05-8): chromatographic grade.

4.1.2 Methanol (CH3OH, CAS No.: 67-56-1): chromatographic grade.

4.1.3 Formic acid (HCOOH, CAS No.: 64-18-6): chromatographic grade.

4.1.4 Dichloromethane (CH2Cl2, CAS No.: 75-09-2).

4.1.5 Hydrochloric acid (HCl, CAS No.: 7647-01-0).

4.1.6 Ammonia solution (NH3.H2O, CAS No.: 1336-21-6).

4.2 Preparation of solutions

4.2.1 Formic acid aqueous solution (0.2%): Take 2 mL of formic acid, dilute to 1 L with water, and mix well.

4.2.2 Formic acid aqueous solution (0.1%): Take 1 mL of formic acid, dilute to 1 L with water, and mix well.

4.2.3 Formic acid in acetonitrile solution (0.1%): Take 1 mL of formic acid, dilute to 1 L with acetonitrile, and mix well.

4.2.4 Hydrochloric acid solution (30 mmol/L): Take 250 uL of hydrochloric acid, dilute to 100 mL with water, and mix well.

4.2.5 Methanol?ammonia solution (4+1): Take 400 mL of methanol, add 100 mL of ammonia solution, and shake to mix.

4.2.6 Acetonitrile?formic acid aqueous solution (1+1): Take 100 mL of acetonitrile, add 100 mL of formic acid aqueous solution (4.2.1), and shake to mix.

4.3 Standards

Kasugamycin standard (C14H22N3O9, CAS No.: 6980-18-3).

Jinggangmycin A standard (C20H32NO10, CAS No.: 37248-47-8).

Ningnanmycin standard (C16H26N2O8, CAS No.: 156410-09-2).

5 Apparatus and equipment

5.1 Liquid chromatography?triple quadrupole mass spectrometer: equipped with an electrospray ionization (ESI) source.

5.2 Analytical balances: sensitivities of 0.1 mg and 0.01 g.

5.3 Tissue homogenizer.

5.4 Centrifuge: maximum rotational speed not less than 5 000 r/min.

5.5 Vortex mixer: speed range of 800 r/min to 3 000 r/min.

5.6 Rotary evaporator.

5.7 Nitrogen evaporator.

5.8 Solid phase extraction apparatus.

6 Sample preparation

6.1 Preparation of test samples

The sample determination parts shall be carried out in accordance with Annex A of GB 2763-2026, and the sampling amount shall be carried out in accordance with relevant standards or provisions.

Vegetables, fruits, edible fungi and sugar crops shall be chopped and mixed thoroughly after chopping, then sampled by the quartering method or directly placed into a tissue homogenizer to be homogenized into a slurry, and then placed into polyethylene bottles or bags.