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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 22249-2024

Replacing GB/T 22249-2008

Determination of lycopene in health foods

保健食品中番茄红素的测定

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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.

This document specifies the technical requirements related to food quality. For food safety requirements, please refer to relevant laws, regulations, policies and food safety standards. document.

This document replaces GB/T 22249-2008 "Determination of lycopene in health foods".

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

a) The sample preparation and processing methods have been changed (see 7.1, 7.2, 5.1 of the 2008 edition);

b) The chromatographic reference conditions have been changed (see 7.3, 5.3 of the 2008 edition);

c) The detection limit and quantification limit have been changed (see Chapter 10, Chapter 1 of the 2008 edition);

d) Added the calibration method for lycopene standard stock solution (see Appendix A).

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 was proposed and coordinated by the National Technical Committee for Standardization of Special Foods (SAC/TC466).

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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 22249-2008;

- This is the first revision.

Determination of Lycopene in Health Food

1 Scope

This document describes a method for the determination of lycopene in health foods by HPLC.

This document is applicable to the determination of lycopene in health foods in dosage forms such as soft capsules, hard capsules, tablets, and powders.

2 Normative references

GB/T 6682

3 Terms and definitions

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

4 Principle

The lycopene in the non-microencapsulated sample was extracted or dissolved by an organic solvent to obtain a sample solution; the microencapsulated sample was treated with

an ammonia-phosphate buffer solution After the cell wall was broken, the lycopene in the sample was dispersed into the solution, and tetrahydrofuran was added to dissolve it to obtain the sample solution.

The products were separated by HPLC and detected by UV detector. The products were qualitatively identified by retention time and quantitatively identified by external standard method.

5 Reagents or materials

Unless otherwise specified, only analytical grade reagents were used.

5.1 Reagents

5.1.1 Water. Grade 1 water as specified in GB/T 6682. 5.1.2 Ethanol (C2H5OH).

5.1.3 Petroleum ether. boiling range 60°C~90°C.

5.1.4 N,N-Dimethylformamide (C3H7NO). chromatographically pure.

5.1.5 Preparation of ammonia-phosphate buffer solution. Measure 143 mL of ammonia water, add it to 857 mL of water, mix well, and adjust the pH to 5.5 with phosphoric acid. 9.8±0.1.

5.1.6 Preparation of 0.025% 2,6-di-tert-butyl-p-cresol (BHT) tetrahydrofuran solution. Weigh 0.25 g (accurate to 0.1 mg) of BHT and Add tetrahydrofuran to 1 L and mix well.

5.1.7 Preparation of 0.5% BHT dichloromethane solution. Weigh 2.5 g (accurate to 0.1 mg) BHT into a brown glass container and After ultrasonic dissolution with 100 mL of dichloromethane (chromatographic grade), cool to room temperature, transfer to a 500 mL brown volumetric flask, and Transfer to a brown reagent bottle and store in a sealed container at room temperature away from light. The shelf life is 3 months.