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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 45243-2025

Replacing GB/T 5009.197-2003

Determination of thiamine, riboflavin, pyridoxine, niacin, niacinamide and caffeine in health foods

保健食品中硫胺素、核黄素、吡哆醇、烟酸、烟酰胺和咖啡因的测定

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Table of Contents

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 5009.197-2003 "Thiamin hydrochloride, pyridoxine hydrochloride, niacin, niacinamide and caffeine in health foods" Compared with GB/T 5009.197-2003, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 2003 edition);

b) Added the determination of riboflavin (see 5.3.2, 5.4.2, 7.4, 7.5, Chapter 8 and Appendix A);

c) The sample preparation and processing methods have been changed (see 7.1, 7.2, 5.1 of the 2003 edition);

d) The reference conditions for liquid chromatography have been changed (see 7.3, 5.2 of the 2003 edition);

e) The detection limit and quantification limit have been changed (see Chapter 10, Chapter 1 of the 2003 edition).

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 2003 as GB/T 5009.197-2003;

- This is the first revision.

Thiamine, riboflavin, pyridoxine, niacin, Determination of Nicotinamide and Caffeine

1 Scope

This document describes the HPLC determination of thiamine, riboflavin, pyridoxine, niacin, niacinamide and caffeine in health foods. method.

This document applies to thiamine, Determination of riboflavin, pyridoxine, niacin, niacinamide and caffeine.

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 sample was extracted and diluted with 20% methanol-0.1% phosphoric acid solution, separated by high performance liquid chromatography column and detected by ultraviolet detector to retain Qualitative analysis was performed by time and quantitative analysis was performed by external standard method.

5 Reagents or materials

Unless otherwise specified, only chromatographic grade reagents were used.

5.1 Reagents

5.1.1 Water. Grade 1 water as specified in GB/T 6682. 5.1.2 Methanol (CH3OH). 5.1.3 Acetonitrile (CH3CN).

5.1.4 Sodium 1-decanesulfonate (C10H21NaO3S).

5.1.5 Phosphoric acid (H3PO4). analytical grade.

5.1.6 Hydrochloric acid (HCl). analytical grade.

5.1.7 Acid phosphatase. enzyme activity >= 0.5 U/mg.

5.2 Reagent preparation

5.2.1 20% methanol-0.1% phosphoric acid solution. Take.200 mL of methanol (5.1.2) and 1 mL of phosphoric acid (5.1.5), dilute to 1000 mL with water, and ultrasonically