



GB 5009.89-2023

National Food Safety Standard

Determination of Niacin and Niacinamide in Food

食品安全国家标准 食品中烟酸和烟酰胺的测定

National Health Commission of the People's
Republic of China
State Administration for Market Regulation

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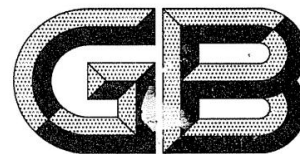
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National Standard of the People's Republic of China

GB 5009.89-2023

In Replacement of GB 5009.89-2016

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Foreword

This standard replaces GB 5009.89-2016 “National Food Safety Standard - Determination of Niacin and Nicotinamide in Foods”.

Compared with GB 5009.89-2016, the main changes of this standard are as follows:

——High performance liquid chromatography method was adjusted to the first method, and microbiological method was adjusted to the second method;

——Added the requirements for the microplate method and pH adjustment after sample treatment in the second method of microbiological method;

——The concentration range, precision and limit of quantitation of the standard curve of the second method of microbiological method have been modified.

National Food Safety Standard

Determination of Niacin and Niacinamide in Food

1 Scope

This standard specifies the determination method of niacin and niacinamide in food.

The first method of this standard is applicable to the determination of niacin and niacinamide in recombined milk powder, special dietary foods (excluding special medical infant formulas with partially hydrolyzed milk protein, extensively hydrolyzed milk protein or amino acid formulas, and amino acid metabolism disorder formulas) and special purpose beverages. The second method is applicable to the determination of niacin (or niacinamide) in foods.

Method 1 High Performance Liquid Chromatography

2 Principle

After pre-treatment such as enzymatic hydrolysis and protein precipitation, the samples were extracted by ultrasonic oscillation in a weakly acidic environment, separated by a C18 column, and detected by a UV detector. The nicotinic acid and nicotinamide contents in the samples were calculated by qualitative analysis based on the retention time of the chromatographic peak and quantitative analysis using the external standard method.

3 Reagents and materials

Unless otherwise specified, all reagents used in this method were of analytical grade and the water was Grade-1 water as specified in GB/T6682.

3.1 Reagents

3.1.1 Hydrochloric acid (HCl): high-grade pure.

3.1.2 Sodium hydroxide (NaOH): high purity.

3.1.3 Methanol (CH_3OH): chromatographically pure

3.1.4 Isopropanol ($\text{C}_3\text{H}_8\text{O}$): chromatographically pure.

3.1.5 Sodium heptane sulfonate ($\text{C}_7\text{H}_{15}\text{NaO}_3\text{S}$): chromatographically pure.



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