



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

**中华人民共和国国家标准**

GB 5413.17-2010

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**National food safety standard  
Determination of pantothenic acid in foods for infants  
and young children, milk and milk products**

**食品安全国家标准**

**婴幼儿食品和乳品中泛酸的测定**

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**Issued by the Ministry of Health of P.R of China**

## Preface

The 1st Method in this Standard is identical to AOAC (Association of Official Analytical Chemists) Official Method 945.74 Pantothenic Acid in Vitamin Preparations.

This Standard will replace GB/T 5413.17-1997 "Milk powder and formula foods for infant and young children--Determination of pantothenic acid".

Compared with GB/T 5413.17-1997, the main amendments of the 1 st Method described in this Standard are as follows:

- The preparation method of tris buffer was added;
- The determination of wavelength was assured;
- The verbal description of drawing a standard curve was added;

The main amendments of the Method 2 are as follows;

- The chromatographic column has been changed;
- The mobile phase has been changed;
- The treatment method for hydrolysis of starch-containing specimen was added;

Appendix A of this Standard is informative.

The versions replaced by this standard are:

- GB 5413—1985 and GB/T 5413.17—1997.

# **National food safety standard**

## **Determination of fatty acids in foods for infants and young children, milk and milk products**

### **1. Scope**

This standard provides the determination of pantothenic acid in infant foods and dairy.

This standard applies to determination of pantothenic acid in infant foods and dairy.

### **2. Normative Reference**

The following normative documents contain provision which, through reference in this text, constitute provisions of this national standard. For dated reference, subsequent amendments to, or revisions of, any of these publications do not apply to this standard; but parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest edition of the normative document referred to applies.

### **The 1st Method: Microbiological Methods**

### **3. Principle**

Pantothenate Medium is a pantothenic acid/pantothenatefree dehydrated medium containing all other nutrients and vitamins essential for the cultivation of *Lactobacillus plantarum* ATCC 8014. The addition of calcium pantothenate in specified increasing concentrations gives a growth response that can be measured turbidimetrically or titrimetrically.

## 4. Reagents and Materials

Unless otherwise specified, all reagents used in this method are analytical reagents; and the water is 2<sup>nd</sup> grade water specified in GB/T 6682.

### 4.1 0.9% physiological saline

Dissolve 9.0 g sodium chloride in the 1000 mL water, place the solution respectively in the test tubes with stopper, 10 mL each, and then sterilized 15 min under 121°C. Prepare it weekly.

### 4.2 Standard Calcium Pantothenate

### 4.3 Acetic acid solution (0.2mol/L)

pipette 12 mL glacial acetic acid and dilute with distilled water to 1000 mL.

### 4.4 Toluene (C<sub>7</sub>H<sub>8</sub>)

### 4.5 Sodium acetate: c(NaAc) is 0.2mol/L.

Dissolve 16.4g anhydrous sodium acetate in the water and dilute to 1000 mL.

### 4.6 Bacterial strain

*Lactobacillus plantarum*, ATCC 8014

### 4.7 Culture Medium

#### 4.7.1 Lactobacillus agar culture medium

Mix 15g phtolytic peptone, 5g yeast extract, 10g glucose, 100mL tomato juice, 2g potassium dihydrogen phosphate ,1g sorbitan monooleate and 10g agar, add the distilled water to 1000 mL, and adjust the pH value to 6.8±0.2 (20°C~25°C).



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