



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

中华人民共和国国家标准

GB 5413.25-2010

**National food safety standard
Determination of inositol 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肌醇的测定

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Foreword

This standard replaces GB/T 5413.25- 1997 (Determination of Inositol in Formula Foods and Milk products for Infants and Young Children).

Compared with GB/T 5413.25- 1997, the following main changes have been made to the first method:

- modify strain storage culture medium.
- change hydrochloric acid distillation method to hydrochloric acid pressure hydrolysis for test sample treatment.
- change strain inoculation mode from mixing bacteria liquid and culture medium and then dispensing to test tubes to dripping bacteria liquid to test tubes.
- adjust the concentration of standard working solution.
- adjust the sterilization temperature from 100℃ to 121℃.
- identify the requirements and methods for controlling the concentration of inoculation bacterial suspension.
- increase the suitability of the calculation formula.
- increase the detection limit.

The following main changes have been made to the second method:

- adopt inositol silylation derivation method.
- increase the detection limit.

Appendix A and B of this standard are informative.

The versions replaced by this standard are:

- GB 5413- 1985, GB/T 5413.25- 1997.

National food safety standard

Determination of inositol in foods for infants and young children, milk and milk products

1 Scope

This standard specifies the determination method of inositol in foods for infants and young children and milk products.

This standard applies to determination of inositol in foods for infants and young children and milk products.

2 Normative References

The normative documents referenced in the text are indispensable to the application of this standard. For dated references, only the edition bearing such date applies to this standard. For undated references, the latest edition of the normative document referred to (including all the amendments) applies.

Method 1 Microorganism method

3 Principles

Utilizing the specificity and sensitivity of *Saccharomyces uvarum* for inositol, the content of the test material in the test sample can be determined quantitatively. In culture medium containing all nutrition components except for the test material, there is a linear relationship between the growth of microorganisms and the content of the test material; through comparing transmittancy with the standard curve, the content of the test material in the test sample can be calculated.

4 Reagents and materials

Unless otherwise specified, all reagents used in this method are analytical reagents; water is secondary water specified in GB/T 6682.

4.1 Strain: *Saccharomyces uvarum* (ATCC 9080).

4.2 Standard substance of myo-Inositol: formula $C_6H_{12}O_6$, purity $\geq 99\%$.

4.3 Sodium chloride (NaCl)

4.4 Sodium hydroxide (NaOH)

4.5 Culture medium

4.5.1 Malt extract agar: refer to appendix A

4.5.2 Culture medium for inositol determination :refer to appendix A

4.6 sodium chloride solution (9 g/L): Weigh 9.0 g sodium chloride, dissolve with 1000 mL water, and dispense it to test tubes, 10 mL per tube. Sterilize at $121^\circ C$ for 15 min.

4.7 hydrochloric acid solution (1 mol/L): Measure 82.0 mL concentrated hydrochloric acid; dissolve with

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