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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

GB 31617-2014

**National food safety standard - Food nutrition
enhancer - Casein phosphopeptide (CPP)**

食品安全国家标准 食品营养强化剂 酪蛋白磷酸肽

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National food safety standard - Food nutrition enhancer - Casein phosphopeptide (CPP)

1 Scope

This standard applies to the food nutrition enhancer - casein phosphopeptide, which is produced by enzymatic hydrolysis, using milk or casein products as raw materials.

2 Molecular structure and relative molecular mass

The main active ingredient is a polypeptide, which contains 1 ~ 6 phosphoserine residues. The relative molecular mass is 1000 u ~ 5000 u.

3 Technical requirements

3.1 Sensory requirements

It shall comply with the provisions of Table 1.

3.2 Physical and chemical indicators

It shall comply with the provisions of Table 2.

3.3 Microbial indicators

Appendix A

Inspection method

A.1 General provisions

Unless otherwise specified in this standard, the purity of the reagents used shall be of analytical pure or higher. For the standard titration solutions, the standard solutions, preparations, products used for the determination of impurities, they shall be prepared in accordance with GB/T 601, GB/T 602, GB/T 603. The test water shall meet the requirements of grade 3 water in GB/T 6682. The solution, which is used in the test, refers to the aqueous solution, when the solvent is not specified.

A.2 Identification test

A.2.1 Reagents and materials

A.2.1.1 Sulfuric acid.

A.2.1.2 Copper sulfate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$).

A.2.1.3 Potassium sulfate (K_2SO_4).

A.2.1.4 Mixed reagents: Sulfuric acid solution (mass fraction 25%) + ammonium molybdate solution (25 g/L) + water + vitamin C solution (100 g/L), 1 + 1 + 2 + 1.

A.2.2 Analytical procedures

Transfer the dry precipitate (A.3.4), which is obtained from the determination of the content of casein phosphopeptide, into a Kjeldahl digestion tube. Add 10 mL of sulfuric acid and 1 g of catalyst (0.1 g of copper sulfate and 0.9 g of potassium sulfate). Heat to digest it completely. Take 1 mL of digestion solution in a test tube. Add 1 mL of water. Put it in boiling water bath, for 10 min. Take it out. Cool it to room temperature. Pipet 100 μL into another test tube. Add 1.9 mL of water. Then add 3 mL of mixed reagent. Keep it in a 45 °C water bath, for 20 min. Take out. The solution shall be blue.

A.3 Determination of casein phosphopeptide content

A.3.1 Method summary

Add a certain concentration of barium ions to the sample solution. The barium ions form bridges, between the casein phosphopeptide molecules. At an appropriate temperature and pH, adding a certain concentration of ethanol can

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