NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB 31645-2018

National food safety standard -- Collagen peptide

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1 Scope

This Standard is applicable to collagen peptide products for the purpose of food processing.

2.1 Collagen Peptide

Collagen peptide is a product that takes fresh animal tissues (including skin, bone, muscle, tendon and scale, etc.) that contain sufficient collagen as the raw material. It is produced through extraction, hydrolysis and refining; its molecular mass is lower than 10,000.

3.2 Sensory Requirements

Sensory requirements shall comply with the stipulation in Table 1 below.

3.3 Physical and Chemical Indicators

Physical and chemical indicators shall comply with the stipulation in Table 2 below.

3.5 Microorganism Limit

Microorganism limit shall comply with the stipulation in Table 4 below.

Appendix A Test Method of Proportion of Collagen Peptide with Relative Molecular Mass

Less Than 10,000 (High-performance size exclusion chromatography)

A.1 Method Summary High-performance size exclusion chromatography shall be adopted in determination.

Specifically speaking, adopt porous filler as the stationary phase; separate in accordance with the difference in molecular volume of the sample components; test under the condition of 220 nm ultraviolet absorption wavelength of peptide bond. Adopt exclusive data processing software (namely, GPC software) for the determination of relative molecular mass distribution; process the chromatogram and the data of standard substance and the

sample. In accordance with relative molecular mass correction curve equation, calculate the relative molecular mass and distribution range of collagen peptide.

A.2 Reagents A.2.1 Acetonitrile. chromatographic purity.

A.2.2 Trifluoroacetate. analytical purity.

A.2.3 Water. Grade-1 water stipulated in GB/T 6682.

A.2.4 Standard substances applied in relative molecular mass correction curve.

A.3 Instruments and Equipment A.3.1 High-performance liquid chromatograph. equipped with UV detector and chromatography workstation that contains GPC data processing software.

A.3.2 Mobile phase vacuum filtration degasser.

A.3.3 Ultrasonic oscillator.

A.3.4 Analytical balance. division value. 0.0001 g.

A.4 Chromatographic conditions and System Adaptability Experiment Respectively use mobile phase to prepare peptide standard solutions of the above-mentioned different relative molecular mass at the concentration of around 1.0 g/L.

Use polytetrafluoroethylene (PTFE) or nylon filter membrane (aperture. 0.2 um ~ 0.5 um) to filter it. Then, respectively inject it; obtain the chromatogram of series standard substance. Use the logarithm of relative molecular mass (lgMW) to draw the retention time or conduct linear regression. Thus, obtain the relative molecular mass correction curve and its equation.

A.6 Sample Preparation Use weighing paper to weigh-take around 125.0 mg of sample; transfer it into a 25 mL volumetric flask. Use mobile phase to fixate it at a constant volume. Start ultrasonic oscillation for 10 min, so that the sample can be thoroughly dissolved and mixed. Use polytetrafluoroethylene (PTFE) or nylon filter membrane (aperture. 0.2 um ~ 0.5 um)

to filter it. Reserve the filtrate for determination.