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

GB/T 44984-2024

**Determination of L-(+)-glutamic acid content in meat and meat
products**

肉与肉制品中 L-(+)-谷氨酸含量的测定

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is equivalent to ISO 4134:2021 "Reference method for determination of L-()-glutamic acid content in meat and meat products".

The following minimal editorial changes were made to this document.

--- To coordinate with the existing standard, the name of the standard is changed to "Determination of L-()-Glutamic Acid Content in Meat and Meat Products".

1 Scope

This document describes the spectrophotometric and absorbance-based enzyme-labeled method for the determination of free L-()-glutamic acid in meat and meat products.

This document applies to meat and meat products.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

Note: GB/T 12808-2015 Laboratory glassware single-line pipettes (ISO 648:2008, NEQ) flasks)
Note. GB/T 12806-2011 Laboratory glassware single-line volumetric flasks (ISO 1042:1998, NEQ)
ofmoisturecontent-Referencemethod) Note. GB 5009.3-2016 National Food Safety Standard
Determination of Water in Food (ISO 1442:1997, NEQ) andtestmethods) Note. GB/T 6682-2008

Specifications and test methods for water used in analytical laboratories (ISO 3696:1987, MOD)
ISO 8655-2 Piston-operated volumetric instruments Part 2: Piston-operated volumetric pipettes

3 Terms and definitions

The following terms and definitions apply to this document.

Free L-()-glutamic acid
free L-()-glutamic acid L-()-Glutamic acid and glutamate salts present in free form in meat and meat products.

4 Principle

Use perchloric acid solution to extract free L-()-glutamic acid ($C_5H_9NO_4$) in the test sample. Centrifuge and filter the extract, and dilute with water to the appropriate concentration was adjusted to pH 10. Nicotinamide adenine dinucleotide (NAD) was converted to L-()-glutamate in the presence of glutamate dehydrogenase.

Reduction, see formula (1). The reduced nicotinamide adenine dinucleotide (NADH) obtained reacts with iodonitrile chloride in the presence of diaphorase.

The reaction of tetrazolium blue (INT) is shown in formula (2). The content of the obtained formazan is measured at a wavelength of 490 nm, and the free L-()-Glutamic acid content.