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

GB/T 47199-2026

Assay method for hexokinase activity and purity

己糖激酶活性及纯度检测方法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Working Group on Standardization of Enzymes and Tools (SAC/SWG11). This document was drafted by: Huacan (Xiamen) Biopharmaceutical Co., Ltd., Xiahe (Shenzhen) Biotechnology Co., Ltd., and Nanjing Novozymes Biotechnology. Technology Co., Ltd., Xiahe (Guangzhou) Optoelectronic Biotechnology Co., Ltd., Guangdong Marubi Biotechnology Co., Ltd., Wuhan Xinhua Yang Biotech Co., Ltd., Huahui Marine Polysaccharide Biotechnology (Shenzhen) Co., Ltd., Wuhan Hongren Biopharmaceutical Co., Ltd., Shenzhen Ying Kai Biotechnology Co., Ltd., Beijing Jianping Jinxing Biomedical Co., Ltd., Shenyang Biotechnology Co., Ltd., Jiangsu Chuangjian Medical Technology Co., Ltd. Technology Co., Ltd., Meikang Biotechnology Co., Ltd., Fujian Saif Safety Technology Service Co., Ltd., Hunan Shangcheng Biotechnology Co., Ltd. Limited Liability Company, Xiahe (Hangzhou) Biotechnology Co., Ltd., Nansheng (Xiamen) Analytical Testing Co., Ltd., Fujian Nansheng Technology Co., Ltd., Datianhua Canbio Biotechnology Co., Ltd., Shanghai Yingzi Life Science Co., Ltd., Hainan Huayan Collagen Technology Co., Ltd., Fudan University, Shandong University Universities and colleges including Shanghai Jiao Tong University, Soochow University, Fujian Agriculture and Forestry University, Zhejiang University of Commerce and Industry, Xiamen University, Zhejiang Normal University, and Shanghai Chuyu Biological Science University Technology Co., Ltd. The main drafters of this document are. Zheng Dengzhong, Huang Facan, Wang Cui, Guo Yanwei, Sun Yunqi, Pan Wei, Xu Li, Wang Shuangxu, Zhang Yang, Zhang Zhen,

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Hexokinase (HK) is a hexose phosphorylase that uses hexose as a specific substrate and catalyzes the phosphorylation of hexoses. Used for the detection of blood glucose and urine glucose and the preparation of test strips. Developing national standards for the detection methods of hexokinase activity and purity to promote... This will facilitate the production and use of these enzyme tools and is of great significance for promoting their industrialization. Methods for detecting hexokinase activity and purity

1 Scope

GB/T 47199-2026 is the Chinese national standard covering assaying hexokinase - the enzyme at the heart of the coupled reaction used to measure glucose in clinical chemistry, so its activity and purity determine the accuracy of a very large number of laboratory results. First edition, in force since 1 June 2026, with the alkaline phosphatase assay GB/T 47201-2026. It was issued on 27 February 2026 and has been in force since 1 June 2026, as a first edition. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the methods for detecting hexokinase activity and purity. This document applies to the detection of hexokinase activity and purity.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 40174-2021 Methods for Determination of Purity of Tool Enzymes

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 hexokinase A transferase that uses adenosine triphosphate (ATP) as the phosphate

source and catalyzes the phosphorylation of D-hexose at the C6 position.

3.2 At pH

7.6 and 25°C, 1 μmol of glucose-6-phosphorus was generated per minute under the catalysis of hexokinase with glucose as a substrate. The amount of enzyme required for an acid is one active unit.

4.Principles Glucose and adenosine triphosphate (ATP) undergo phosphorylation under the catalysis of hexokinase to produce adenosine diphosphate (ADP) and glucose. Sugar-6-phosphate, which is then dehydrogenated to reduce nicotinamide adenine dinucleotide phosphate (NADP) to reduced nicotinamide adenine dinucleotide phosphate. NADPH acid. NADPH has a specific absorption peak at a wavelength of 340 nm. The concentration of NADPH can be determined by measuring the rate of increase in absorbance at 340 nm. Calculate the activity units of the enzyme. glucose ATP Hexokinase $\rightarrow$ D-glucose-6-phosphate ADP D-glucose-6-phosphate NADP glucose-6-phosphate dehydrogenase $\rightarrow$ 6-PG NADPH

5 Reagents or materials

5.1 Water Water that meets the requirements of GB/T 6682 (Grade II).