Hexokinase

Product Number: H8210
CAS Number :   9001-51-8
Storage Temperature: -20°C
Synonym: ATP:D-hexose 6-phosphotransferase

Product Description

Glycolysis is the process occurring in almost all living organisms by which they metabolize D-glucose to generate energy and metabolic intermediates. In the first step of glycolysis, hexokinase phosphorylates the C6 position of D-glucose in the presence of ATP by the following reaction: ATP + D-glucose → ADP + D-glucose6-phosphate

Yeast hexokinase has three isozymes, designated P-I, P-II, and glucokinase (Glk1). Each has distinctive properties. Yeast hexokinase P-II has both a catalytic and a regulatory function.

Several other hexoses can serve as substrates for hexokinase (relative reaction rates):

Glucose;2-deoxy-2-fluoro-D-glucose; mannosamine; 5-thioglucose; 3-deoxy-3-aminoglucose; 1,5-anhydro-D-glucitol, 1-thio-D-glucose.

Molecular Weight:110 kDa (dimer)   Hexokinase is a dimeric protein with two equal 55 kDa monomers.

Activators:Mg^{2+}(K_M = 2.6 mM), catecholamine-related compounds

Inhibitors:D-glucosamine ;D-mannose;D-xylose; 6-deoxy-D-glucose ;N-acetylmannoseamine.

Also sorbose-1-phosphate, polyphosphates, 6-deoxy-6-fluoroglucose, 2-C-hydroxy-methylglucose, lyxose, and thiol reactive compounds

Hexokinase is used for the determination of D-glucose, D-fructose, and D-sorbitol infood or other biological materials.

Hexokinase can also be used in the assay of glycosides that are convertible to glucose or fructose.

Unit Definition: One unit will phosphorylate 1.0 μmole of D-glucose per min at pH 7.6 at 25 °C.

Preparation Instructions

Hexokinase is soluble in cold water (0.5-1.0 unit/ml) or citrate buffer, pH 7.0.

Storage/Stability

Store the product at –20 °C and it is stable for at least 2 years when stored properly.

Solutions in water or citrate buffer have remained stable during repeated freezing and thawing for a period of 30 days.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.