

Recombinant Human Glucokinase (Hexokinase 4)

Cat. No. GCK-328H Lot. No. (See product label)

SPECIFICATION

Species Human

Source E.coli

Description

Glucokinase is a structurally and functionally unique member of the hexokinase family. Glucokinase is expressed only in mammalian liver and pancreatic islet beta cells. Because of its unique functional characteristics, the enzyme plays an important regulatory role in glucose metabolism. Defects in the glucokinase gene have long been suspected contributors to the genetic susceptibility to noninsulindependent diabetes mellitus. It is suggested that mutant GCK leads to chronic hyperglycemia by raising the threshold of circulating glucose levels which induces insulin secretion. Given the central role of glucokinase in the regulation of insulin release, it is understandable that mutations in the GCK gene can cause both hyper and hypoglycemia. Recently, a novel class of drugs that stimulate the GK molecule directly have been discovered, which offer a new principle for drug therapy of diabetes.

Purity > 95% by SDS-PAGE.

Form Liquid. Supplied in 20 mM Tris-HCl pH 8.0, 20% glycerol, 100 mM KCl, 0.2 mM EDTA and 1 mM DTT.

Application May be used for the phosphorylation of Glucose.

Storage Quality guaranteed for 12 months. Store at -80°C. Avoid freeze / thaw cycles.

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Usage For in vitro use only.

GENE INFORMATION

Gene Name GCK glucokinase (hexokinase 4) [Homo sapiens]

Synonyms GCK; glucokinase (hexokinase 4); GK; GLK; HK4; HHF3; HKIV; HXKP; MODY2; Hexokinase type IV; HK IV; Hexokinase-D; EC 2.7.1.2; Hexokinase-4; OTTHUMP00000024521; OTTHUMP00000159308; D-hexose 6-phosphotransferase; Hexokinase type IV; hexokinase D, pancreatic isozyme; maturity onset diabetes of the young 2

Gene ID 2465

mRNA Refseq NM_000162

Protein Refseq NP_000153

MIM 138079

UniProt ID P35557

Chromosome Location 7p15.3-p15.1

Pathway Amino sugar and nucleotide sugar metabolism; Galactose metabolism; Glycolysis / Gluconeogenesis; Insulin signaling pathway; Maturity onset diabetes of the young; Metabolic pathways; Starch and sucrose metabolism; Streptomycin biosynthesis; Type II diabetes mellitus; Diabetes pathways; Integration of energy metabolism; Integration of energy metabolism; Metabolism of carbohydrates; Regulation of beta-cell development

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Function

ATP binding; glucokinase activity; glucose binding; kinase activity; nucleotide binding; protein binding; transferase activity

**Based on PDB entry
1GLK.**



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