

Recombinant Human Glucokinase (Hexokinase 4)

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

SPECIFICATION

Product Overview

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.

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

Function

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

Based on PDB entry
1GLK.

