# Recombinant human Hexokinase 4 protein

Catalog Number: ATGP3845

## PRODUCT INFORMATION

**Expression system**
E.coli

**Domain**
1-465aa

**UniProt No.**
P35557

**NCBI Accession No.**
NP_000153

**Alternative Names**
GCK, glucokinase, MODY2, Maturity onset diabetes of the young 2, Hexokinase 4, HK4, Hexokinase type IV, HK IV, Hexokinase-D

## PRODUCT SPECIFICATION

**Molecular Weight**
54.3 kDa (485aa)

**Concentration**
1mg/ml (determined by Bradford assay)

**Formulation**
Liquid in. 20mM Tris-HCl buffer (pH 8.0) containing 10% glycerol

**Purity**
> 95% by SDS-PAGE

**Endotoxin level**
< 1 EU per 1ug of protein (determined by LAL method)

**Biological Activity**
Specific activity is > 2,000pmol/min/ug. One unit will convert 1pmole of D-Glucose to D-Glucose-6-phosphate per minute at pH8.0 at 37C.

**Tag**
His-Tag

**Application**
SDS-PAGE, Enzyme Activity

**Storage Condition**
Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.

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## BACKGROUND

### Description

Hexokinase is the first enzyme in the glycolytic pathway, catalyzing the transfer of a phosphoryl group from ATP to glucose to form glucose-6-phosphate and ADP. In mammals, four distinct enzymes -types 1 to 4 hexokinases- have been identified. The enzyme is found in most cells, but there is tissue specificity for the particular type of hexokinase. Hexokinase 4 is found in the liver and pancreatic beta-cells, where it is controlled by insulin (activation) and glucagon (inhibition). In pancreatic beta-cells, type IV enzyme acts as a glucose sensor to modify insulin secretion. Hexokinase 4 is commonly called glucokinase. Recombinant human Hexokinase 4, fused to His-tag at N-terminus, was expressed in E.coli and purified by using conventional chromatography techniques.

### Amino acid Sequence

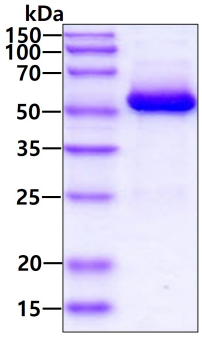
<MGSSHHHHHH SSGLVPRGSH> MLDDRARMEA AKKEKVEQIL AEFQLQEEDL KKVMRRMQKE MDRGLRLETH EEASVKMLPT YVRSTPEGSE VGDFLSLDLG GTNFRVMLVK VGEGEEGQWS VKTKHQMYSI PEDAMTGTAE MLFDYISECI SDFLDKHQMK HKKLPLGFTF SFPVRHEDID KGILLNWTKG FKASGAEGNN VVGLLRDAIK RRGDFEMDVV AMVNDTVATM ISCYYEDHQC EVGMIVGTGC NACYMEEMQN VELVEGDEGR MCVNTEWGAF GDSGELDEFL LEYDRLVDES SANPGQQLYE KLIGGKYMGE LVRLVLLRLV DENLLFHGEA SEQLRTRGAF ETRFVSQVES DTGDRKQIYN ILSTLGLRPS TTDCDIVRRA CESVSTRAAH MCSAGLAGVI NRMRESRSED VMRITVGVDG SVYKLHPSFK ERFHASVRRL TPSCEITFIE SEEGSGRGAA LVSAVACKKA CMLGQ

### General References

Jon E. et al.,(2003) J.Exp Biology. 206: 2049-2057

## DATA

### SDS-PAGE




3ug by SDS-PAGE under reducing condition and visualized by coomassie blue stain.