Data Sheet (Cat.No.TMPY-06752)

TargetMol

Hexokinase-2/HK2 Protein, Mouse, Recombinant (His)

General Information

Protein Construction:	A DNA sequence encoding the Mouse HK2 (O08528) (Met1-Arg917) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 1
Species:	Mouse
Expression Host:	Baculovirus Insect Cells
Accession:	O08528
Molecular Weight:	103.99 kDa (predicted); 90.32 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	≥ 90 % as determined by SDS-PAGE. ≥ 85 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM PB, 300 mM NaCl, 10% glycerol, pH 7.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Hexokinase 2 (HK2), a rate-limiting enzyme in the first step of the glycolysis pathway, expresses at a high level in cancer cells compared with normal cells. HK2 provides a new target for cancer therapy due to its pivotal role in tumor tumourigenic and metastatic processes. The glycolytic enzyme hexokinase 2 (HK2) is crucial for the Warburg effect in human glioma, the most common malignant brain tumor. Although absent in most adult tissues, hexokinase 2 (HK2) is expressed in a majority of tumors and contributes to increased glucose consumption and to in vivo tumor 18F-FDG PET signaling. Hexokinase 2 (HK2) is a rate-determining enzyme in aerobic glycolysis, a

process upregulated in tumor cells. HK2 expression is controlled by various transcription factors and epigenetic alterations and is heterogeneous in hepatocellular carcinomas (HCCs), though the cause of this heterogeneity is not known.

Reference

Xu S,et al.(2018) Hexokinase 2 is targetable for hk1 negative, hk2 positive tumors from a wide variety of tissues of origin. J Nucl MedLiu H,et al.(2017) Hexokinase 2 (hk2), the tumor promoter in glioma, is downregulated by mir-218/bmi1 pathway. PLoS One 12 (12): e0189353.
Lee HG,et al.(2016) Regulation of hk2 expression through alterations in cpg methylation of the hk2 promoter during progression of hepatocellular carcinoma. Oncotarget 7 (27): 41798-41810.
Bao F,et al.(2018) New natural inhibitors of hexokinase 2 (hk2): Steroids from ganoderma sinense. Fitoterapia 125 123-129.