PKM2 Protein, Mouse (sf9, His)

Cat. No.:	HY-P74629
Synonyms:	Pyruvate Kinase M2; PKM2; CTHBP; OIP-3; THBP1
Species:	Mouse
Source:	Sf9 insect cells
Accession:	P52480 (P2-P531)
Gene ID:	18746
Molecular Weight:	Approximately 59 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder
Formulation	Lyophilized from 0.22 μm filtered solution in 20 mM Tris, 500 mM NaCl (pH 7.0). Normally 8% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The PKM2 protein assumes a multifaceted role in cellular processes, catalyzing the final rate-limiting step of glycolysis by mediating the transfer of a phosphoryl group from phosphoenolpyruvate (PEP) to ADP, generating ATP. The dynamic balance between its highly active tetrameric form and nearly inactive dimeric form dictates whether glucose carbons are directed towards biosynthetic processes or utilized for glycolytic ATP production, thereby contributing to the control of glycolysis. This transition between forms holds crucial significance for tumor cell proliferation and survival. An isoform expressed specifically during embryogenesis exhibits low pyruvate kinase activity by itself and necessitates allosteric activation by D-fructose 1,6-bisphosphate (FBP). Beyond its cytoplasmic pyruvate kinase activity, PKM2 functions as a transcriptional regulator in the nucleus, acting as a protein kinase. Upon translocation into the nucleus in response to various signals, such as EGF receptor activation, it homodimerizes, transforming into a protein threonine- and tyrosine-protein kinase. PKM2 also catalyzes the phosphorylation of STAT3 and histone H3, contributing to transcriptional activation. Its role in cancer cells involves promoting cell proliferation and tumorigenesis, along with regulating the expression of immune checkpoint proteins. Additionally, PKM2 acts as a translation regulator for specific mRNAs independently of its

pyruvate kinase activity, associating with endoplasmic reticulum-associated ribosomes and promoting translation of endoplasmic reticulum-destined mRNAs. Furthermore, PKM2 plays a role in caspase-independent cell death in tumor cells. The diverse functionalities of PKM2 underscore its central position in coordinating crucial cellular processes with implications for metabolism, growth, and disease.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA