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Produktinformation

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION

PKM2 (human, recombinant)

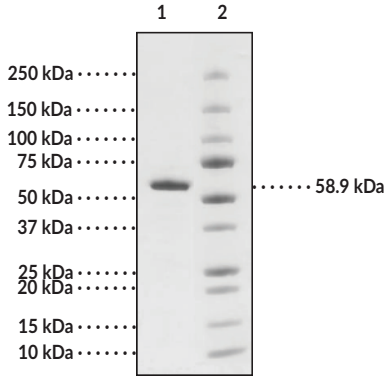
Item No. 32564

Overview and Properties

Synonyms:	CTHBP, Cytosolic Thyroid Hormone-binding Protein, OIP3, Opa-interacting Protein 3, Pyruvate Kinase Muscle 2, THBP1, Thyroid Hormone-binding Protein 1
Source:	Active recombinant human N-terminal His-tagged PKM2 expressed in *E. coli*
Amino Acids:	1-531 (full length)
Uniprot No.:	P14618
Molecular Weight:	58.9 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	40 mM Tris-HCl, pH 8.0, with 110 mM NaCl, 2.2 mM KCl, 200 mM imidazole, 20% glycerol, and 3 mM DTT
Protein Concentration:	***batch specific*** mg/ml
Activity:	A 50 µl PKM2 reaction is conducted in a buffer containing 50 mM Tris (pH 7.4), 10 mM $MgCl_2$, 50 mM KCl, 2 mM ADP, 10 mM phosphoenolpyruvate (PEP). ATP production measured *via* luminescence at room temperature for 15 min.
Specific Activity:	39 pmoles/min/µg

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

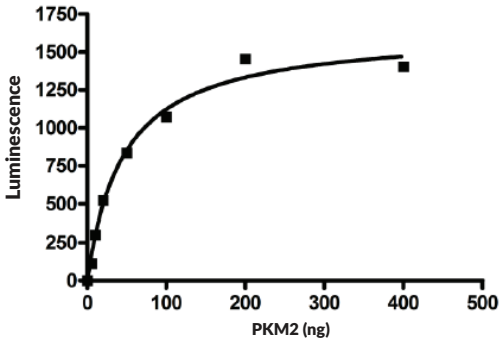
Images



Lane 1: PKM2
Lane 2: MW Markers

SDS-PAGE Analysis of PKM2.

Representative gel image shown; actual purity may vary between each batch.



PKM2 Specific Activity

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PRODUCT INFORMATION

Description

Pyruvate kinase (PK) is an enzyme that catalyzes the transfer of a phosphate group from phosphoenolpyruvate to ADP during aerobic glycolysis.[1] PKM2 is an isoform of PK encoded by *PKM* in humans that is primarily expressed during embryonic development and localized to the cytosol. PKM2 expression is attenuated in adult tissues, however, it is reactivated in cancer cells during tumor development.[1-3] It functions as a tetramer in the cytosol that is formed or dissociated in response to post-translational modifications and various allosteric regulators, such as fructose-1,6-bisphosphate, as well as the oxidation of its cysteine residues.[4] It interacts with various tyrosine kinases, such as Bcr-Abl, A-RAF, and FGFR1, in a reciprocal interaction that regulates PKM2 enzyme kinetics and kinase signaling.[2] PKM2 also functions as a dimer that can translocate to the nucleus and activate various transcription factors, including STAT3, NF-κB, and HIF-1α, to induce gene transcription.[2,3] Levels of PKM2 are increased in mesothelioma, osteosarcoma, and hepatomas, as well as ovarian, breast, gallbladder, and gastric cancers, and are associated with poor prognosis. Cayman's PKM2 (human, recombinant) protein can be used for enzyme assay applications.

References

1. Bailey, K.M., Wojtkowiak, J.W., Hashim, A.I., *et al.* Chapter four - Targeting the metabolic microenvironment of tumors. *Advances in Pharmacology*, Smalley, K.S.M., editor, 1st edition, *Elsevier* (2012).
2. Hsu, M.-C. and Hung, W.-C. Pyruvate kinase M2 fuels multiple aspects of cancer cells: From cellular metabolism, transcriptional regulation to extracellular signaling. *Mol. Cancer* **17(1)**, 35 (2018).
3. Zhang, Z., Deng, X., Liu, Y., *et al.* PKM2, function and expression and regulation. *Cell Biosci.* **9**, 52 (2019).
4. Sciacovelli, M., Gaude, E., Hilvo, M., *et al.* Chapter one - The metabolic alterations of cancer cells. *Methods in Enzymology*, Galluzzi, L. and Kroemer, G., editors, 1st edition, *Elsevier* (2014).

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