

Product Datasheet

PDK4 Antibody - BSA Free NBP1-07047

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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NBP1-07047

PDK4 Antibody - BSA Free

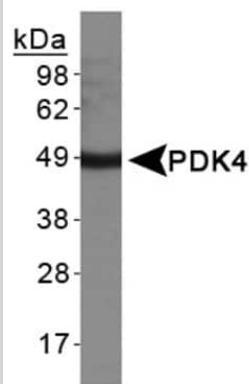
Product Information	
Unit Size	0.1 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.1% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS and 30% Glycerol
Target Molecular Weight	49 kDa

Product Description	
Host	Rabbit
Gene ID	5166
Gene Symbol	PDK4
Species	Human, Mouse
Reactivity Notes	Immunogen displays the following percentage of sequence identity for non-tested species: rat (94%), bovine (100%)
Immunogen	Synthetic peptide made to an internal portion of the human PDK4 protein (within residues 100-150). [Swiss-Prot# Q16654]

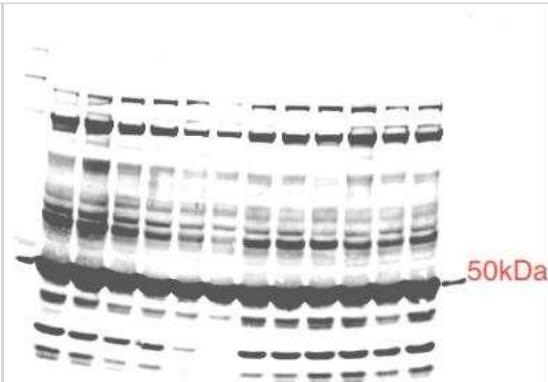
Product Application Details	
Applications	Western Blot, Immunocytochemistry/ Immunofluorescence
Recommended Dilutions	Western Blot 2 ug/ml, Immunocytochemistry/ Immunofluorescence reported in scientific literature (PMID 25991547)
Application Notes	In Western blot, a band is seen at ~49 kDa. This product is not recommended for ICC, as nonspecific nuclear staining was observed in HeLa cells. The observed molecular weight of the protein may vary from the listed predicted molecular weight due to post translational modifications, post translation cleavages, relative charges, and other experimental factors.

Images

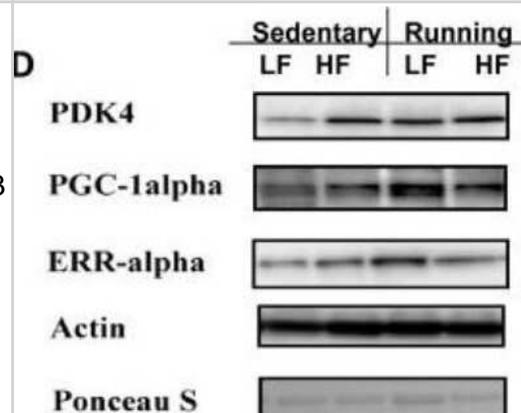
Western Blot: PDK4 Antibody [NBP1-07047] - Western Blot on human heart protein lysate.



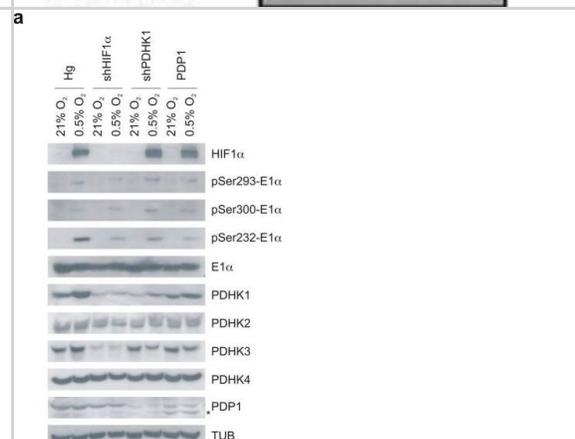
Western Blot: PDK4 Antibody [NBP1-07047] - Mouse liver. NuPAGE 4-12%. This image was submitted via customer review.



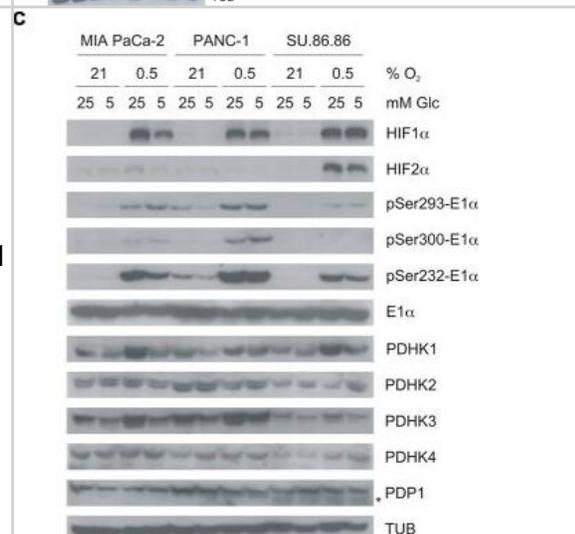
Western Blot: PDK4 Antibody [NBP1-07047] - The protein expression levels in QF muscle. Representative Western blot images. n = 14-15 animals/group. * = vs. LFsed (P < 0.05), NS = non-significant (P > 0.1). Black bars = sedentary, grey bars = running. Image collected and cropped by CiteAb from the following publication (<https://nutritionandmetabolism.biomedcentral.com/articles/10.1186/1743-7075-9-53>), licensed under a CC-BY license.



Western Blot: PDK4 Antibody - BSA Free [NBP1-07047] - Genetic manipulations can alter PDH E1 α phosphorylation in response to hypoxia. (a) MIA PaCa-2 control (Hg), silenced HIF1 α (shHIF1 α) or silenced PDHK1 (shPDHK1) & PDP1 overexpressing cells were incubated for 16 h in normoxia or hypoxia (0.5% O₂) & phospho-serine E1 α detected by Western blot showing that all three modifications can have an inhibitory effect on hypoxic Ser232 phosphorylation. (b) Increased pSer232-E1 α detection after E1 α immunoprecipitation from lysates of cells treated as in (a). (c) The same analysis as in (a) after treatment with 16 h 1 mM DMOG. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/27498883>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: PDK4 Antibody - BSA Free [NBP1-07047] - Hypoxia inhibits mitochondrial OCR & PDH activity & induces PDHK1 protein & activity. (a) Ratio of oxygen consumption rate (OCR) to extracellular acidification rate (ECAR) measured by Seahorse XF in MIA PaCa-2, PANC-1, & SU.86.86 cell lines in high (25 mM) or low (0.5 mM) glucose incubated overnight with or without 1 mM DMOG. (mean \pm SEM, two-tailed Student's t-test, **p < 0.01, ***p < 0.001) (b) Cell-based PDH activity assay in cells incubated 16 h in normoxia, hypoxia (0.5% O₂) or 1 mM DMOG. (mean \pm SD, one-way ANOVA, *p < 0.05, **p < 0.01, ***p < 0.001) (c) Western blots of HIF α isoforms, pyruvate dehydrogenase kinase isoforms (PDHKs), phosphatase (PDP1 – lower band *), target phosphorylated serine residues on E1 α & total E1 α after overnight incubation in normoxia or hypoxia (0.5% O₂) at 25 or 5 mM glucose as indicated. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/27498883>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Toshihide Kashihara, Risa Mukai, Shin-ichi Oka, Peiyong Zhai, Yasuki Nakada, Zhi Yang, Wataru Mizushima, Tsutomu Nakahara, Junco S. Warren, Maha Abdellatif, Junichi Sadoshima YAP mediates compensatory cardiac hypertrophy through aerobic glycolysis in response to pressure overload *The Journal of Clinical Investigation* 2022-03-15 [PMID: 35133975]

Zhu L, An J, Chinnarasu S et al. Expressing the Human Cholesteryl Ester Transfer Protein Minigene Improves Diet-Induced Fatty Liver and Insulin Resistance in Female Mice *Frontiers in physiology* 2022-01-10 [PMID: 35082691] (WB, Mouse)

GOnczi M, Csemer A, Szabo L et al. Astaxanthin Exerts Anabolic Effects via Pleiotropic Modulation of the Excitable Tissue *International journal of molecular sciences* 2022-01-14 [PMID: 35055102] (WB, Mouse)

Niku, M, Pajari, A M Et al. Western diet enhances intestinal tumorigenesis in Min/+ mice, associating with mucosal metabolic and inflammatory stress and loss of Apc heterozygosity. *J Nutr Biochem* 2017-01-01 [PMID: 27833053] (ICC/IF, Mouse)

Details:

Citation using the HRP format of this antibody.

Trinidad AG, Whalley N, Rowlinson R et al. Pyruvate dehydrogenase kinase 4 exhibits a novel role in the activation of mutant KRAS, regulating cell growth in lung and colorectal tumour cells *Oncogene* 2017-11-02 [PMID: 28692044] (WB, Mouse)

Strowitzki MJ, Radhakrishnan P, Pavicevic S et al. High hepatic expression of PDK4 improves survival upon multimodal treatment of colorectal liver metastases *Br. J. Cancer* 2019-02-27 [PMID: 30808993] (WB, Human)

Svensson K, Dent JR, Tahvilian S et al. Defining the contribution of skeletal muscle pyruvate dehydrogenase alpha 1 (Pdha1) to exercise performance and insulin action *Am. J. Physiol. Endocrinol. Metab.* 2018-08-28 [PMID: 30153068] (WB, Mouse)

Golias T, Papandreou I, Sun R et al. Hypoxic repression of pyruvate dehydrogenase activity is necessary for metabolic reprogramming and growth of model tumours. *Sci Rep.* 2016-08-08 [PMID: 27498883] (WB, Human)

Oikawa S, Mano A, Takahashi R, Kakinuma Y. Remote ischemic preconditioning with a specialized protocol activates the non-neuronal cardiac cholinergic system and increases ATP content in the heart *Int. Immunopharmacol.* 2015-06-11 [PMID: 26072685] (WB, Mouse)

Hou X, Zhang L, Han L et al. Differential function of pyruvate dehydrogenase kinases during mouse oocyte maturation. *J. Cell. Sci.* 2015-05-19 [PMID: 25991547] (ICC/IF, Mouse)

Ho N, Coomber BL. Pyruvate dehydrogenase kinase expression and metabolic changes following dichloroacetate exposure in anoxic human colorectal cancer cells. *Exp Cell Res* 2015-02-01 [PMID: 25536473] (Human)

Kainulainen H, Papaioannou Kg, Silvennoinen M et al. Myostatin/activin blocking combined with exercise reconditions skeletal muscle expression profile of mdx mice. *Mol. Cell. Endocrinol.* 2014-10-07 [PMID: 25304272] (WB, Mouse)

More publications at <http://www.novusbio.com/NBP1-07047>



Procedures

Serum protocol for PDK4 Antibody (NBP1-07047)

Procedure Guide for NBP1-07047 - PDK4 Antibody

Western Blot Protocol

1. Perform SDS-PAGE (4-12% MOPS) on samples to be analyzed, loading 30 ug of total protein per lane.
 2. Transfer proteins to Nitrocellulose according to the instructions provided by the manufacturer of the transfer apparatus.
 3. Rinse membrane with dH₂O and then stain the blot using Ponceau S for 1-2 minutes to access the transfer of proteins onto the nitrocellulose membrane. Rinse the blot in water to remove excess stain and mark the lane locations and locations of molecular weight markers using a pencil.
 4. Rinse the blot in TBS for approximately 5 minutes.
 5. Block the membrane using 5% NFD_M + 1% BSA in TBS + Tween, 1 hour at RT.
 6. Rinse the membrane in dH₂O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
 7. Dilute the rabbit anti-PDK4 primary antibody (NBP1-07047) in blocking buffer and incubate 1 hour at room temperature.
 8. Rinse the membrane in dH₂O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
 9. Apply the diluted rabbit-IgG HRP-conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
 10. Wash the blot in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each (this step can be repeated as required to reduce background).
 11. Apply the detection reagent of choice in accordance with the manufacturers instructions (Pierce ECL).
- Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%, provided it does not interfere with antibody-antigen binding.





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Products Related to NBP1-07047

NB820-59217	Human Heart Whole Tissue Lysate (Adult Whole Normal)
NBP1-07047PEP	PDK4 Antibody Blocking Peptide
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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