HIPK2 Positive Control

PRODUCT OVERVIEW

Product Name	HIPK2, Positive Control
Full Product Name	HIPK2 Positive Control
Product Gene Name	HIPK2 positive control
Product Synonym Names	Western Blot Positive Control Homeodomain-interacting protein kinase 2 Antibody; HIPK 2 antibody; Homeodomain interacting protein kinase 2 antibody; Nbak1 antibody; Nuclear body-associated kinase 1 antibody; PRO0593 antibody; Sialophorin tail-associated nuclear serine/threonine-protein kinase antibody; Stank antibody
Preparation and Storage	Store at -20 degree C for long term storage.
Molecular Weight	128,158 Da
3D Structure	ModBase 3D Structure for Q9H2X6
Immunogen	Purified protein.
Molecular Function	ATP binding; protein kinase activity; protein serine/threonine kinase activity; RNA polymerase II activating transcription factor binding; RNA polymerase II transcription coactivator activity; SMAD binding; transcription corepressor activity; virion bindin
Subcellular Location	Nucleus; PML body; Cytoplasm
Applications Tested/Suitable for HIPK2 positive control	Western Blot (WB)
Application Notes for HIPK2 positive control	WB: 1:2,500-1:5,000
Related Product Information for HIPK2 positive control	Overview: Serine/threonine-protein kinase involved in transcription regulation, p53/TP53-mediated cellular apoptosis and regulation of the cell cycle. Acts as a corepressor of several transcription factors, including SMAD1 and POU4F1/Brn3a and probably NK homeodomain transcription factors. Phosphorylates PDX1, ATF1, PML, p53/TP53, CREB1, CTBP1, CBX4, RUNX1, EP300, CTNNB1, HMGA1 and ZBTB4. Inhibits cell growth and promotes apoptosis through the activation of p53/TP53 both at the transcription level and at the protein level (by phosphorylation and indirect acetylation). The phosphorylation of p53/TP53 may be mediated by a p53/TP53-HIPK2-AXIN1 complex. Involved in the response to hypoxia by acting as a transcriptional co-suppressor of HIF1A. Expression: Highly expressed in heart, muscle and kidney. Weakly expressed in a ubiquitous way. Down-regulated in several thyroid and breast tumors.
Other Notes	Small volumes of HIPK2 positive control vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for HIPK2 purchase	MBS5400710 is a positive control targeting HIPK2.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for HIPK2. It may not necessarily be applicable to this product.

NCBI GI #	164420691
NCBI GeneID	28996
NCBI Accession #	NP_001106710.1
UniProt Primary Accession #	Q9H2X6

UniProt Secondary Accession #	Q75MR7; Q8WWI4; Q9H2Y1
UniProt Related Accession #	Q9H2X6
GenBank Nucleotide #	NM_001113239.2
NCBI Official Full Name	homeodomain-interacting protein kinase 2 isoform 2
NCBI Official Synonym Full Names	homeodomain interacting protein kinase 2
NCBI Official Symbol	HIPK2
NCBI Official Synonym Symbols	PRO0593
UniProt Protein Name	Homeodomain-interacting protein kinase 2
Protein Family	Homeodomain-interacting protein kinase
UniProt Gene Name	HIPK2
UniProt Synonym Gene Names	hHIPk2
NCBI Protein Information	homeodomain-interacting protein kinase 2
NCBI Summary for HIPK2	This gene encodes a conserved serine/threonine kinase that is a member of the homeodomain-interacting protein kinase family. The encoded protein interacts with homeodomain transcription factors and many other transcription factors such as p53, and can function as both a corepressor and a coactivator depending on the transcription factor and its subcellular localization. Multiple transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Nov 2011]
UniProt Comments for HIPK2	Serine/threonine-protein kinase involved in transcription regulation, p53/TP53-mediated cellular apoptosis and regulation of the cell cycle. Acts as a corepressor of several transcription factors, including SMAD1 and POU4F1/Brn3a and probably NK homeodomain transcription factors. Phosphorylates PDX1, ATF1, PML, p53/TP53, CREB1, CTBP1, CBX4, RUNX1, EP300, CTNNB1, HMGA1 and ZBTB4. Inhibits cell growth and promotes apoptosis through the activation of p53/TP53 both at the transcription level and at the protein level (by phosphorylation and indirect acetylation). The phosphorylation of p53/TP53 may be mediated by a p53/TP53-HIPK2-AXIN1 complex. Involved in the response to hypoxia by acting as a transcriptional co-suppressor of HIF1A. Mediates transcriptional activation of TP73. In response to TGFB, cooperates with DAXX to activate JNK. Negative regulator through phosphorylation and subsequent proteasomal degradation of CTNNB1 and the antiapoptotic factor CTBP1. In the Wnt/beta-catenin signaling pathway acts as an intermediate kinase between MAP3K7/TAK1 and NLK to promote the proteasomal degradation of MYB. Phosphorylates CBX4 upon DNA damage and promotes its E3 SUMO-protein ligase activity. Activates CREB1 and ATF1 transcription factors by phosphorylation in response to genotoxic stress. In response to DNA damage, stabilizes PML by phosphorylation. PML, HIPK2 and FBXO3 may act synergically to activate p53/TP53-dependent transactivation. Promotes angiogenesis, and is involved in erythroid differentiation, especially during fetal liver erythropoiesis. Phosphorylation of RUNX1 and EP300 stimulates EP300 transcription regulation activity. Triggers ZBTB4 protein degradation in response to DNA damage. Modulates HMGA1 DNA-binding affinity. In response to high glucose, triggers phosphorylation-mediated subnuclear localization shifting of PDX1. Involved in the regulation of eye size, lens formation and retinal lamination during late embryogenesis.
Research Articles on HIPK2	**1.** Immunoprecipitation and pulldown experiments identified DCAF7 as an adaptor for the association of the adenovirus E1A protein with DYRK1A and HIPK2
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