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PRODUCT DATASHEET

Anti-GSK-3β (N-terminal region) Antibody

phosphosolutions ANTIBODIES THAT WORK

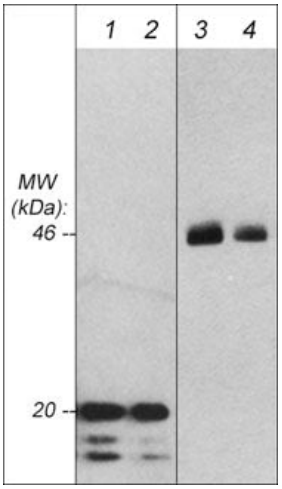
Product Details

Available Variants	100 µL (SKU:GM1311)
Conjugate	Unconjugated
Isotype	IgG1
Clone	M131
Gene Name	GSK3B
Host Species	Mouse
Format	Protein A Purified
Physical State	Liquid
Buffer	PBS + 1 mg/ml BSA, 0.05% NaN3 and 50% glycerol
Applications	ELISA, ICC, IHC, WB
Dilution Ranges	WB: 1:500 IHC: 1:250 ICC: 1:50
Species Reactivity	Human, Mouse, Rat
Immunogen	Clone M131 was generated from a recombinant protein containing amino acid residues in the N-terminal region of human GSK-3β. This sequence is highly conserved in rat and mouse GSK-3β, and has 65% homology to similar regions in GSK-3α.
Specificity	The antibody detects a 46 kDa* protein corresponding to the apparent molecular mass of GSK-3β on SDS-PAGE immunoblots of rabbit fibroblasts, mouse brain, as well as human SKN-SH and A431 cells.
Molecular Weight	46
Quality Control	Western blots performed on each lot.

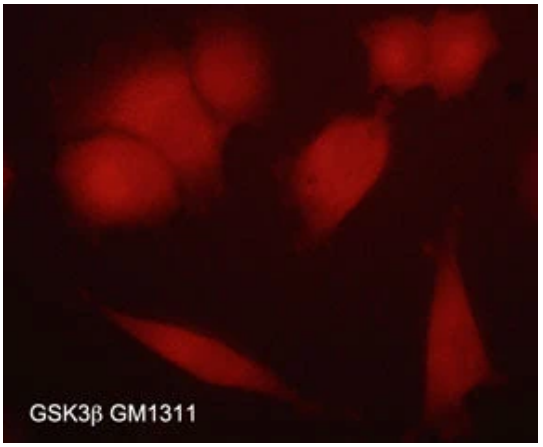
Storage	Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.
UniProt ID	P49841 UniProt Summary: Constitutively active protein kinase that acts as a negative regulator in the hormonal control of glucose homeostasis, Wnt signaling and regulation of transcription factors and microtubules, by phosphorylating and inactivating glycogen synthase (GYS1 or GYS2), EIF2B, CTNNB1/beta-catenin, APC, AXIN1, DPYSL2/CRMP2, JUN, NFATC1/NFATC, MAPT/TAU and MACF1. Requires primed phosphorylation of the majority of its substrates. In skeletal muscle, contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting GYS1 activity and hence glycogen synthesis. May also mediate the development of insulin resistance by regulating activation of transcription factors. Regulates protein synthesis by controlling the activity of initiation factor 2B (EIF2BE/EIF2B5) in the same manner as glycogen synthase. In Wnt signaling, GSK3B forms a multimeric complex with APC, AXIN1 and CTNNB1/beta-catenin and phosphorylates the N-terminus of CTNNB1 leading to its degradation mediated by ubiquitin/proteasomes. Phosphorylates JUN at sites proximal to its DNA-binding domain, thereby reducing its affinity for DNA. Phosphorylates NFATC1/NFATC on conserved serine residues promoting NFATC1/NFATC nuclear export, shutting off NFATC1/NFATC gene regulation, and thereby opposing the action of calcineurin. Phosphorylates MAPT/TAU on 'Thr-548', decreasing significantly MAPT/TAU ability to bind and stabilize microtubules. MAPT/TAU is the principal component of neurofibrillary tangles in Alzheimer disease. Plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. Phosphorylates MACF1, inhibiting its binding to microtubules which is critical for its role in bulge stem cell migration and skin wound repair. Probably regulates NF-kappa-B (NFKB1) at the transcriptional level and is required for the NF-kappa-B-mediated anti-apoptotic response to TNF (TNF/TNFA). Negatively regulates replication in pancreatic beta-cells, resulting in apoptosis, loss of beta-cells and diabetes. Through phosphorylation of the anti-apoptotic protein MCL1, may control cell apoptosis in response to growth factors deprivation. Phosphorylates MUC1 in breast cancer cells, decreasing the interaction of MUC1 with CTNNB1/beta-catenin. Is necessary for the establishment of neuronal polarity and axon outgrowth. Phosphorylates MARK2, leading to inhibition of its activity. Phosphorylates SIK1 at 'Thr-182', leading to sustainment of its activity. Phosphorylates ZC3HAV1 which enhances its antiviral activity. Phosphorylates SNAI1, leading to its ubiquitination and proteasomal degradation. Phosphorylates SFPQ at 'Thr-687' upon T-cell activation. Phosphorylates NR1D1 st 'Ser-55' and 'Ser-59' and stabilizes it by protecting it from proteasomal degradation. Regulates the circadian clock via phosphorylation of the major clock components including BMAL1, CLOCK and PER2. Phosphorylates FBXL2 at 'Thr-404' and primes it for ubiquitination by the SCF(FBXO3) complex and proteasomal degradation. Phosphorylates CLOCK AT 'Ser-427' and targets it for proteasomal degradation. Phosphorylates BMAL1 at 'Ser-17' and 'Ser-21' and primes it for

	ubiquitination and proteasomal degradation. Phosphorylates OGT at 'Ser-3' or 'Ser-4' which positively regulates its activity. Phosphorylates MYCN in neuroblastoma cells which may promote its degradation. Regulates the circadian rhythmicity of hippocampal long-term potentiation and BMAL1 and PER2 expression. Acts as a regulator of autophagy by mediating phosphorylation of KAT5/TIP60 under starvation conditions, activating KAT5/TIP60 acetyltransferase activity and promoting acetylation of key autophagy regulators, such as ULK1 and RUBCNL/Pacer. Negatively regulates extrinsic apoptotic signaling pathway via death domain receptors. Promotes the formation of an anti-apoptotic complex, made of DDX3X, BRIC2 and GSK3B, at death receptors, including TNFRSF10B. The anti-apoptotic function is most effective with weak apoptotic signals and can be overcome by stronger stimulation. Phosphorylates E2F1, promoting the interaction between E2F1 and USP11, stabilizing E2F1 and promoting its activity. Phosphorylates mTORC2 complex component RICTOR at 'Ser-1235' in response to endoplasmic stress, inhibiting mTORC2. Phosphorylates mTORC2 complex component RICTOR at 'Thr-1695' which facilitates FBXW7-mediated ubiquitination and subsequent degradation of RICTOR. Phosphorylates FXR1, promoting FXR1 ubiquitination by the SCF(FBXO4) complex and FXR1 degradation by the proteasome. Phosphorylates interleukin-22 receptor subunit IL22RA1, preventing its proteasomal degradation. Phosphorylates and inhibits the CTP synthase and protein-asparagine deamidase activities of CTPS1. Phosphorylates DSP at multiple sequential serine residues in the C-terminus tail, promoting its recruitment to developing desmosome cell-cell junctions.
Country of Origin	United States
Shipping	Blue Ice
Expiration	After date of receipt, stable for at least 1 year at -20°C.
Usage Statement	For research use only. Not intended for therapeutic or diagnostic use. Use of all products is subject to our terms and conditions, which can be viewed on our website.
NCBI Gene ID	2932

Product Images



Western blot analysis of a human recombinant GSK3β N-terminal fragment (lanes 1 & 2) and endogenous GSK3β expressed in mouse brain (lanes 3 & 4). The blot was probed with mouse monoclonal anti-GSK-3β at 1:500 (lanes 1 & 3) and 1:2000 (lanes 2 & 4).



Immunocytochemical labeling of GSK3β in aldehyde-fixed and NP-40 permeabilized human NCI-H1915 lung carcinoma cells. The cells were labeled with mouse monoclonal anti-GSK3β (GM1311) antibody. The antibody was detected using appropriate secondary antibody conjugated to DyLight® 594.