

Rabbit anti-Human, Mouse GSK3 beta Polyclonal Antibody | anti-GSK3beta antibody

GSK3 beta Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329586	Rabbit	Human, Mouse	ELISA, Immunocytochemistry, Immunofluorescence, Western Blot

PRODUCT SYNONYMS

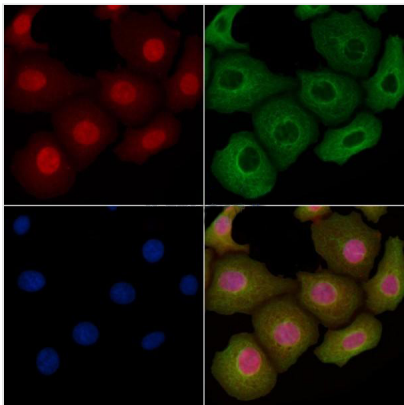
GSK3 beta; Polyclonal Antibody; GSK3 beta Antibody; Glycogen Synthase Kinase 3 Beta; Glycogen synthase kinase-3 beta; GSK 3 beta; GSK-3 beta; GSK3B; GSK3B_HUMAN; GSK3beta isoform; Serine/threonine-protein kinase GSK3B; anti-GSK3beta antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	GSK3 beta Antibody detects endogenous levels of total GSK3 beta. Tissue Specificity: Expressed in testis, thymus, prostate and ovary and weakly expressed in lung, brain and kidney. Colocalizes with EIF2AK2/PKR and TAU in the Alzheimer disease (AD) brain.
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-GSK3beta antibody	ELISA (Peptide ELISA), ICC (Immunocytochemistry), IF (Immunofluorescence), WB (Western Blot)
Immunogen	A synthesized peptide derived from human GSK3 beta.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	Phosphorylated by AKT1 and ILK1. Upon insulin-mediated signaling, the activated PKB/AKT1 protein kinase phosphorylates and desactivates GSK3B, resulting in the dephosphorylation and activation of GYS1. Activated by phosphorylation at Tyr-216. Inactivated by phosphorylation at Ser-9 (Probable). Phosphorylated in a circadian manner in the hippocampus (By similarity). Mono-ADP-ribosylation by PARP10 negatively regulates kinase activity.
Subunit Structure	Monomer. Interacts with ARRB2, DISC1 and ZBED3 (By similarity). Interacts with CABYR, MMP2, MUC1, NIN and PRUNE1. Interacts with AXIN1; the interaction mediates hyperphosphorylation of CTNNB1 leading to its ubiquitination and destruction. Interacts with and phosphorylates SNAI1. Interacts with DNM1L (via a C-terminal domain). Found in a complex composed of MACF1, APC, AXIN1, CTNNB1 and GSK3B (By similarity). Interacts with SGK3. Interacts with DAB2IP (via C2 domain); the interaction stimulates GSK3B kinase activation. Interacts (via C2 domain) with PPP2CA. Interacts with the CLOCK-ARNTL/BMAL1 heterodimer. Interacts with the ARNTL/BMAL1. Interacts with CTNND2. Interacts with NCYM. The complex composed, at least, of APC, CTNNB1 and GSK3B interacts with JPT1; the interaction requires the inactive form of GSK3B (phosphorylated at 'Ser-9'). Forms a complex composed of PRKAR2A or PRKAR2B, GSK3B and GSKIP through GSKIP interaction; facilitates PKA-induced phosphorylation and regulates GSK3B activity. Interacts with GSKIP. Interacts with GID8. Interacts with PIWIL2 (By similarity). Interacts with LMBR1L. Interacts with DDX3X. Interacts with BIRC2. Interacts with TNFRSF10B; TNFRSF10B stimulation inhibits GSK3B kinase activity.
Similarity	Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. GSK-3 subfamily.

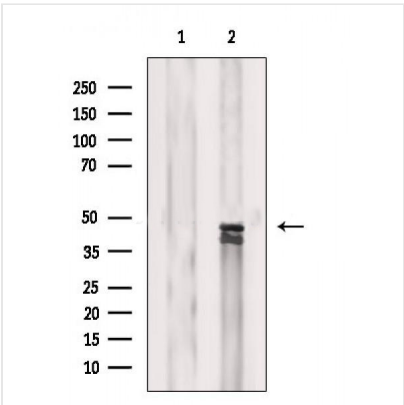
Subcellular Location	Cytoplasm. Nucleus. Cell membrane. Note: The phosphorylated form shows localization to cytoplasm and cell membrane. The MEMO1-RHOA-DIAPH1 signaling pathway controls localization of the phosphorylated form to the cell membrane.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



IF (Immunofluorescence)

Staining HeLa cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. Samples were then incubated with primary Ab(AF6658) and mouse anti-beta tubulin Ab(T0023) for 1 hour at 37 degree C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI (blue).



WB (Western Blot)

Western blot analysis of extracts from Mouse brain, using GSK3 beta Antibody. The lane on the left was treated with blocking peptide.

ADDITIONAL INFORMATION

Related Product Information for anti-GSK3beta antibody	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-alpha (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 inhibit its activity. Phosphorylates SIK1 at 'Thr-182', leading to sustain its activity. Phosphorylates ZC3HAV1 which enhances its antiviral activity. Phosphorylates SNAI1, leading to its BTRC-triggered 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 ARNTL/BMAL1, CLOCK and PER2. Phosphorylates CLOCK AT 'Ser-427' and targets it for proteasomal degradation. Phosphorylates ARNTL/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 ARNTL/BMLA1 and PER2 expression (By similarity). Acts as a regulator of autophagy by mediating phosphorylation of KAT5/TIP60 under starvation conditions, leading to activate KAT5/TIP60 acetyltransferase activity and promote 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.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	225903437
NCBI GeneID	2932
NCBI Accession #	NP_001139628.1
NCBI GenBank Nucleotide #	NM_001146156.1
UniProt Accession #	P49841; Q9BWH3; Q9UL47; D3DN89
Molecular Weight	46,744 Da
NCBI Official Full Name	glycogen synthase kinase-3 beta isoform 2
NCBI Official Synonym Full Names	glycogen synthase kinase 3 beta
NCBI Official Symbol	GSK3B
NCBI Protein Information	glycogen synthase kinase-3 beta; GSK-3 beta; GSK3beta isoform; serine/threonine-protein kinase GSK3B
UniProt Protein Name	Glycogen synthase kinase-3 beta
UniProt Gene Name	GSK3B

UniProt Synonym Gene Names	GSK-3 beta
UniProt Entry Name	GSK3B_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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