

GSK3 β Polyclonal Antibody
Catalog # AP63516**Specification****GSK3 β Polyclonal Antibody - Product Information**

Application	WB
Primary Accession	P49841
Reactivity	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal

GSK3 β Polyclonal Antibody - Additional Information**Gene ID** 2932**Other Names**

GSK3B; Glycogen synthase kinase-3 beta; GSK-3 beta; Serine/threonine-protein kinase GSK3B

Dilution

WB~~WB: 1:1000-2000 IHC: 1:200-500

Format

PBS, pH 7.4, containing 0.09% (W/V) sodium azide as Preservative and 50% Glycerol.

Storage Conditions

-20°C

GSK3 β Polyclonal Antibody - Protein Information**Name** GSK3B ([HGNC:4617](#))**Function**

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 (PubMed:11430833, PubMed:12554650, PubMed:14690523, PubMed:16484495, PubMed:1846781, PubMed:20937854, PubMed:9072970). Requires primed phosphorylation of the majority of its substrates (PubMed:11430833, PubMed:16484495). In skeletal muscle, contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting GYS1 activity and hence glycogen synthesis (PubMed:<a

[8397507](http://www.uniprot.org/citations/8397507)). May also mediate the development of insulin resistance by regulating activation of transcription factors (PubMed: [8397507](http://www.uniprot.org/citations/8397507)). Regulates protein synthesis by controlling the activity of initiation factor 2B (EIF2BE/EIF2B5) in the same manner as glycogen synthase (PubMed: [8397507](http://www.uniprot.org/citations/8397507)). 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 (PubMed: [12554650](http://www.uniprot.org/citations/12554650)). Phosphorylates JUN at sites proximal to its DNA-binding domain, thereby reducing its affinity for DNA (PubMed: [1846781](http://www.uniprot.org/citations/1846781)). 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 (PubMed: [9072970](http://www.uniprot.org/citations/9072970)). Phosphorylates MAPT/TAU on 'Thr-548', decreasing significantly MAPT/TAU ability to bind and stabilize microtubules (PubMed: [14690523](http://www.uniprot.org/citations/14690523)). MAPT/TAU is the principal component of neurofibrillary tangles in Alzheimer disease (PubMed: [14690523](http://www.uniprot.org/citations/14690523)). Plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex (PubMed: [20937854](http://www.uniprot.org/citations/20937854)). Phosphorylates MACF1, inhibiting its binding to microtubules which is critical for its role in bulge stem cell migration and skin wound repair (By similarity). 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) (By similarity). Negatively regulates replication in pancreatic beta-cells, resulting in apoptosis, loss of beta-cells and diabetes (By similarity). Through phosphorylation of the anti-apoptotic protein MCL1, may control cell apoptosis in response to growth factors deprivation (By similarity). Phosphorylates MUC1 in breast cancer cells, decreasing the interaction of MUC1 with CTNNB1/beta-catenin (PubMed: [9819408](http://www.uniprot.org/citations/9819408)). Is necessary for the establishment of neuronal polarity and axon outgrowth (PubMed: [20067585](http://www.uniprot.org/citations/20067585)). Phosphorylates MARK2, leading to inhibition of its activity (By similarity). Phosphorylates SIK1 at 'Thr-182', leading to sustainment of its activity (PubMed: [18348280](http://www.uniprot.org/citations/18348280)). Phosphorylates ZC3HAV1 which enhances its antiviral activity (PubMed: [22514281](http://www.uniprot.org/citations/22514281)). Phosphorylates SNAI1, leading to its ubiquitination and proteasomal degradation (PubMed: [15448698](http://www.uniprot.org/citations/15448698), PubMed: [15647282](http://www.uniprot.org/citations/15647282), PubMed: [25827072](http://www.uniprot.org/citations/25827072), PubMed: [29059170](http://www.uniprot.org/citations/29059170)). Phosphorylates SFPQ at 'Thr-687' upon T-cell activation (PubMed: [20932480](http://www.uniprot.org/citations/20932480)). Phosphorylates NR1D1 at '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 (PubMed: [19946213](http://www.uniprot.org/citations/19946213), PubMed: [28903391](http://www.uniprot.org/citations/28903391)). Phosphorylates FBXL2 at 'Thr-404' and primes it for ubiquitination by the SCF(FBXO3) complex and proteasomal degradation (By similarity). Phosphorylates CLOCK at 'Ser-427' and targets it for proteasomal degradation (PubMed: [19946213](http://www.uniprot.org/citations/19946213)). Phosphorylates BMAL1 at 'Ser-17' and 'Ser-21' and primes it for ubiquitination and proteasomal degradation (PubMed: [28903391](http://www.uniprot.org/citations/28903391)). Phosphorylates OGT at 'Ser-3' or 'Ser-4' which positively regulates its activity. Phosphorylates MYCN in neuroblastoma cells which may promote its degradation (PubMed: [24391509](http://www.uniprot.org/citations/24391509)).

target="_blank">24391509). Regulates the circadian rhythmicity of hippocampal long-term potentiation and BMAL1 and PER2 expression (By similarity). 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 (PubMed:30704899). 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 (PubMed:18846110). Phosphorylates E2F1, promoting the interaction between E2F1 and USP11, stabilizing E2F1 and promoting its activity (PubMed:17050006, PubMed:28992046). Phosphorylates mTORC2 complex component RICTOR at 'Ser-1235' in response to endoplasmic stress, inhibiting mTORC2 (PubMed:21343617). Phosphorylates mTORC2 complex component RICTOR at 'Thr-1695' which facilitates FBXW7-mediated ubiquitination and subsequent degradation of RICTOR (PubMed:25897075). Phosphorylates FXR1, promoting FXR1 ubiquitination by the SCF(FBXO4) complex and FXR1 degradation by the proteasome (By similarity). Phosphorylates interleukin-22 receptor subunit IL22RA1, preventing its proteasomal degradation (By similarity).

Cellular Location

Cytoplasm. Nucleus. Cell membrane. Note=The phosphorylated form shows localization to cytoplasm and cell membrane (PubMed:20937854) The MEMO1-RHOA-DIAPH1 signaling pathway controls localization of the phosphorylated form to the cell membrane (PubMed:20937854)

Tissue Location

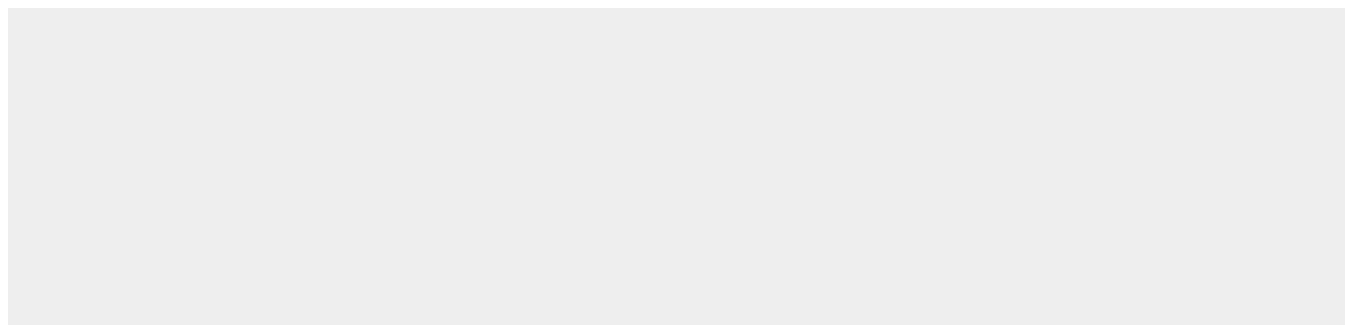
Expressed in testis, thymus, prostate and ovary and weakly expressed in lung, brain and kidney. Colocalizes with EIF2AK2/PKR and TAU in the Alzheimer disease (AD) brain

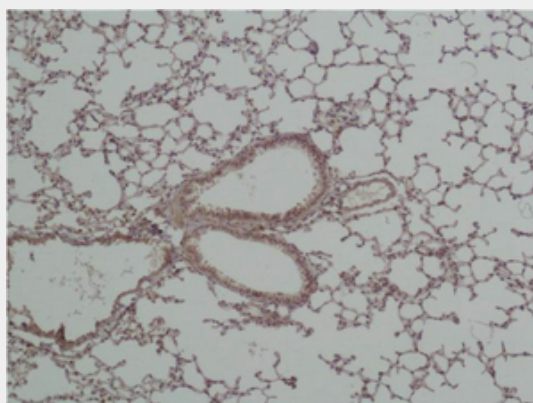
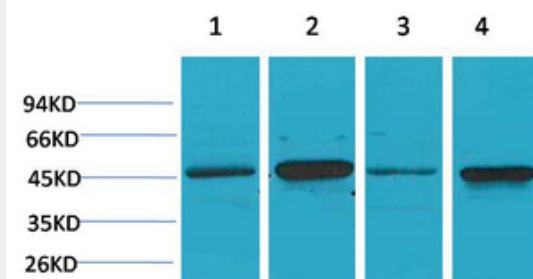
GSK3β Polyclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

GSK3β Polyclonal Antibody - Images





GSK3β Polyclonal Antibody - Background

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activation. Phosphorylates NR1D1 at '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 (PubMed:24391509).