

**GSK-3 $\alpha$  Antibody**  
**Rabbit Polyclonal Antibody**  
**Catalog # ABV11227****Specification**

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**GSK-3 $\alpha$  Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P49840</a>
Other Accession	<a href="#">NP_063937</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	50981

**GSK-3 $\alpha$  Antibody - Additional Information****Gene ID 2931**

Positive Control  
Application & Usage  
**Other Names**

**Western Blot: 3T3 cell lysate**  
**Western blot: 1-4  $\mu$ g**

Serine/threonine-protein kinase GSK3A, GSK-3 $\alpha$ , Glycogen synthase kinase-3, GSK-3  $\alpha$

**Target/Specificity**  
GSK-3 $\alpha$

**Antibody Form**  
Liquid

**Appearance**  
Colorless liquid

**Formulation**  
100  $\mu$ g (0.5 mg/ml) of GSK-3 $\alpha$  antibody in PBS pH 7.2, 0.01 % BSA, 0.01 % thimerosal, and 50 % glycerol.

**Handling**  
The antibody solution should be gently mixed before use.

**Reconstitution & Storage**  
-20  $^{\circ}$ C

**Background Descriptions**

**Precautions**  
GSK-3 $\alpha$  Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## GSK-3 $\alpha$ Antibody - Protein Information

### Name GSK3A

#### 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), CTNNB1/beta-catenin, APC and AXIN1 (PubMed:<a href="http://www.uniprot.org/citations/11749387" target="\_blank">11749387</a>, PubMed:<a href="http://www.uniprot.org/citations/17478001" target="\_blank">17478001</a>, PubMed:<a href="http://www.uniprot.org/citations/19366350" target="\_blank">19366350</a>). Requires primed phosphorylation of the majority of its substrates (PubMed:<a href="http://www.uniprot.org/citations/11749387" target="\_blank">11749387</a>, PubMed:<a href="http://www.uniprot.org/citations/17478001" target="\_blank">17478001</a>, PubMed:<a href="http://www.uniprot.org/citations/19366350" target="\_blank">19366350</a>). Contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting GYS1 activity and hence glycogen synthesis (PubMed:<a href="http://www.uniprot.org/citations/11749387" target="\_blank">11749387</a>, PubMed:<a href="http://www.uniprot.org/citations/17478001" target="\_blank">17478001</a>, PubMed:<a href="http://www.uniprot.org/citations/19366350" target="\_blank">19366350</a>). Regulates glycogen metabolism in liver, but not in muscle (By similarity). May also mediate the development of insulin resistance by regulating activation of transcription factors (PubMed:<a href="http://www.uniprot.org/citations/10868943" target="\_blank">10868943</a>, PubMed:<a href="http://www.uniprot.org/citations/17478001" target="\_blank">17478001</a>). In Wnt signaling, regulates the level and transcriptional activity of nuclear CTNNB1/beta-catenin (PubMed:<a href="http://www.uniprot.org/citations/17229088" target="\_blank">17229088</a>). Facilitates amyloid precursor protein (APP) processing and the generation of APP-derived amyloid plaques found in Alzheimer disease (PubMed:<a href="http://www.uniprot.org/citations/12761548" target="\_blank">12761548</a>). May be involved in the regulation of replication in pancreatic beta-cells (By similarity). Is necessary for the establishment of neuronal polarity and axon outgrowth (By similarity). Through phosphorylation of the anti-apoptotic protein MCL1, may control cell apoptosis in response to growth factors deprivation (By similarity). Acts as a regulator of autophagy by mediating phosphorylation of KAT5/TIP60 under starvation conditions which activates KAT5/TIP60 acetyltransferase activity and promotes acetylation of key autophagy regulators, such as ULK1 and RUBCNL/Pacer (PubMed:<a href="http://www.uniprot.org/citations/30704899" target="\_blank">30704899</a>). 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 (By similarity). Phosphorylates mTORC2 complex component RICTOR at 'Thr- 1695' which facilitates FBXW7-mediated ubiquitination and subsequent degradation of RICTOR (PubMed:<a href="http://www.uniprot.org/citations/25897075" target="\_blank">25897075</a>).

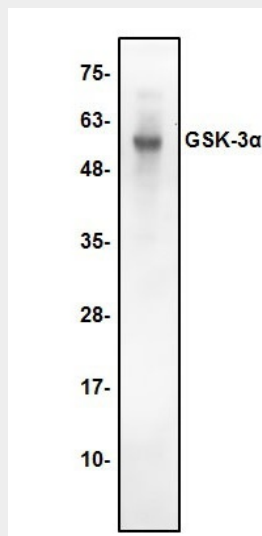
## GSK-3 $\alpha$ Antibody - Protocols

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](#)

## **GSK-3 $\alpha$ Antibody - Images**



Western blot with GSK-3 $\alpha$  antibody. Lane 1: Recombinant 3T3 cell lysate.

## **GSK-3 $\alpha$ Antibody - Background**

Glycogen synthase kinase 3-alpha is a multifunctional protein serine kinase. GSK-3 phosphorylates and inactivates glycogen synthase. It has also been implicated in the regulation of cell fate in *Dictyostelium* and is a component of the Wnt signaling pathway required for *Drosophila*, *Xenopus*, and mammalian development. GSK-3 has been shown to regulate Cyclin D1 proteolysis and subcellular localization. GSK-3alpha (GSK-3 $\alpha$ ) regulates the production of amyloid-beta peptides, a major component of the plaques that accumulate with progression of Alzheimer's disease, by phosphorylating Tau proteins. This presents the possibility that defects in GSK-3 signaling can contribute to the onset of Alzheimer's disease. GSK-3 $\alpha$  can be phosphorylated by Akt at Ser21. This phosphorylation of GSK-3 $\alpha$  negatively regulates its kinase activity.