

**GSK3 alpha (GSK3A) Antibody (C-term)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP8120B****Specification**

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**GSK3 alpha (GSK3A) Antibody (C-term) - Product Information**

Application	WB, IHC-P,E
Primary Accession	<a href="#">P49840</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Region	448-478

**GSK3 alpha (GSK3A) Antibody (C-term) - Additional Information****Gene ID** 2931**Other Names**

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

**Target/Specificity**

This GSK3 alpha (GSK3A) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 448-478 amino acids from the C-terminal region of human GSK3 alpha (GSK3A).

**Dilution**

WB~~1:1000

IHC-P~~N/A

E~~Use at an assay dependent concentration.

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

GSK3 alpha (GSK3A) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

**GSK3 alpha (GSK3A) Antibody (C-term) - Protein Information****Name** GSK3A**Function** Constitutively active protein kinase that acts as a negative regulator in the hormonal

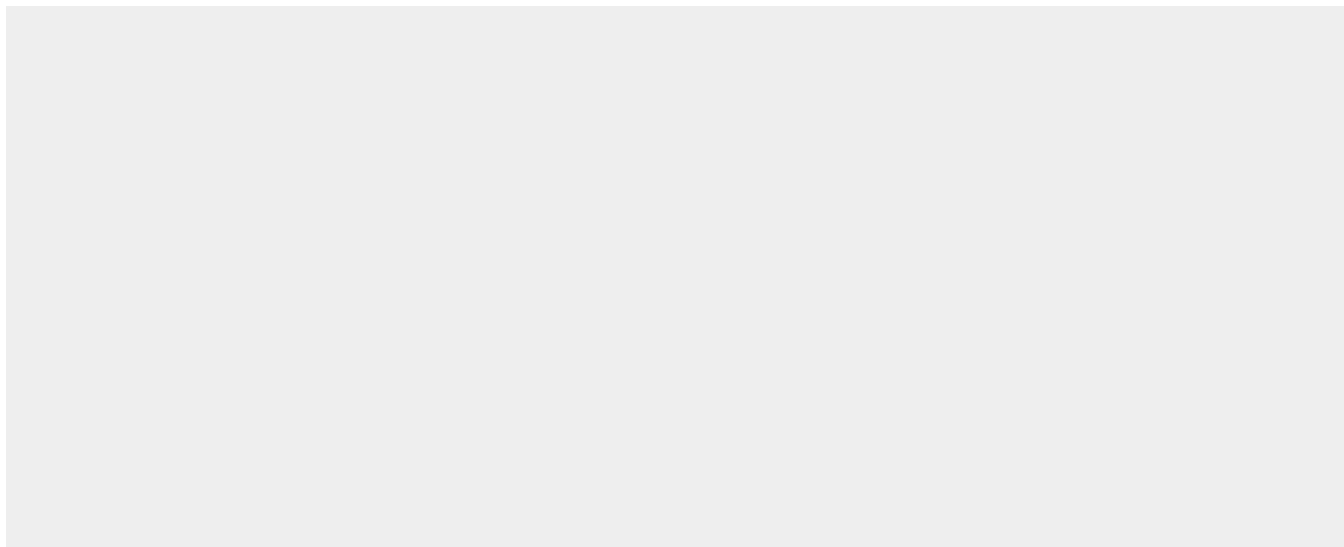
control of glucose homeostasis, Wnt signaling and regulation of transcription factors and microtubules, by phosphorylating and inactivating glycogen synthase (GYS1 or GYS2), CTNNB1/beta-catenin, APC and AXIN1 (PubMed:[11749387](#), PubMed:[17478001](#), PubMed:[19366350](#)). Requires primed phosphorylation of the majority of its substrates (PubMed:[11749387](#), PubMed:[17478001](#), PubMed:[19366350](#)). Contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting GYS1 activity and hence glycogen synthesis (PubMed:[11749387](#), PubMed:[17478001](#), PubMed:[19366350](#)). 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:[10868943](#), PubMed:[17478001](#)). In Wnt signaling, regulates the level and transcriptional activity of nuclear CTNNB1/beta-catenin (PubMed:[17229088](#)). Facilitates amyloid precursor protein (APP) processing and the generation of APP-derived amyloid plaques found in Alzheimer disease (PubMed:[12761548](#)). 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:[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 (By similarity). Phosphorylates mTORC2 complex component RICTOR at 'Thr- 1695' which facilitates FBXW7-mediated ubiquitination and subsequent degradation of RICTOR (PubMed:[25897075](#)).

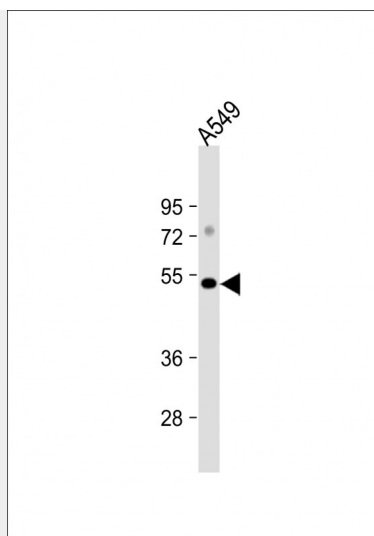
### **GSK3 alpha (GSK3A) Antibody (C-term) - Protocols**

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](#)

### **GSK3 alpha (GSK3A) Antibody (C-term) - Images**





Anti-GSK3A Antibody (E463) at 1:1000 dilution + A549 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 51 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

### **GSK3 alpha (GSK3A) Antibody (C-term) - Background**

Glycogen synthase kinase 3-alpha (GSK3A) is a multifunctional protein serine kinase implicated in the control of several regulatory proteins including glycogen synthase and transcription factors. It also plays a role in the WNT and PI3K signaling pathways.<sup>1</sup> Under resting conditions GSK3A and its homologs are highly phosphorylated at tyr279 in the phosphorylation loop.<sup>2</sup> Constitutive phosphorylation of this tyrosine is important for kinase activity. Dephosphorylation of tyr279 after mitogen activation is accompanied by kinase inactivation. PKA as well as PI3K-activated PKB inactivate GSK3A by phosphorylation at ser21.<sup>3</sup> Lysophosphatidic acid primarily utilizes a PKC-dependent pathway to modulate GSK3 and certain growth factors (e.g., PDGFB), which control GSK3 mainly through PI3K-PKB, are able to regulate GSK3 through an alternative, redundant phospholipase-C-gamma-PKC pathway.<sup>4</sup> Alzheimer disease (AD) is associated with increased production and aggregation of amyloid-beta-40 and -42 peptides into plaques. GSK3A is required for maximal production of the beta-amyloid-40 and -42 peptides generated from the amyloid precursor protein (APP) by presenilin (PSEN1)-dependent gamma-secretase cleavage.<sup>5</sup> In vitro, lithium, a GSK3A inhibitor, blocked the production of the beta-amyloid peptides by interfering with the gamma-secretase step. In mice expressing familial AD-associated mutations in APP and PSEN1, lithium reduced the levels of beta-amyloid peptides. GSK3A also phosphorylates the tau protein (MAPT), the principal component of neurofibrillary tangles in AD, and suggested that inhibition of GSK3A may offer a new therapeutic approach to AD.

### **GSK3 alpha (GSK3A) Antibody (C-term) - References**

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).

### **GSK3 alpha (GSK3A) Antibody (C-term) - Citations**

- [HNF4α is a therapeutic target that links AMPK to WNT signalling in early-stage gastric cancer.](#)