

**Phospho-GSK3A(S21) Antibody Blocking peptide**  
**Synthetic peptide**  
**Catalog # BP3664a****Specification**

---

**Phospho-GSK3A(S21) Antibody Blocking peptide - Product Information**Primary Accession [P49840](#)**Phospho-GSK3A(S21) Antibody Blocking peptide - Additional Information****Gene ID** 2931**Other Names**

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

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP3664a](/products/AP3664a) was selected from the region of human Phospho-GSK3A-S21. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**Phospho-GSK3A(S21) Antibody Blocking peptide - 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](http://www.uniprot.org/citations/11749387) target="\_blank">11749387</a>, PubMed: [17478001](http://www.uniprot.org/citations/17478001) target="\_blank">17478001</a>, PubMed: [19366350](http://www.uniprot.org/citations/19366350) target="\_blank">19366350</a>). Requires primed phosphorylation of the majority of its substrates (PubMed: [11749387](http://www.uniprot.org/citations/11749387) target="\_blank">11749387</a>, PubMed: [17478001](http://www.uniprot.org/citations/17478001) target="\_blank">17478001</a>, PubMed: [19366350](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: [11749387](http://www.uniprot.org/citations/11749387) target="\_blank">11749387</a>, PubMed: [17478001](http://www.uniprot.org/citations/17478001) target="\_blank">17478001</a>, PubMed: [19366350](http://www.uniprot.org/citations/19366350) target="\_blank">19366350</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>).

### **Phospho-GSK3A(S21) Antibody Blocking peptide - Protocols**

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

- [Blocking Peptides](#)

### **Phospho-GSK3A(S21) Antibody Blocking peptide - Images**

### **Phospho-GSK3A(S21) Antibody Blocking peptide - Background**

Glycogen synthase kinase 3-alpha is a multifunctional protein serine kinase, homologous to Drosophila 'shaggy' (zeste-white3) and 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

### **Phospho-GSK3A(S21) Antibody Blocking peptide - References**

Fang,X., Yu,S., et.al., Mol. Cell. Biol. 22 (7), 2099-2110 (2002)