

**Anti-GSK3 alpha pS21 (RABBIT) Antibody**  
**GSK3 Alpha phospho S21 Antibody**  
**Catalog # ASR5223**

**Specification**

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**Anti-GSK3 alpha pS21 (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human
Clonality	Polyclonal
Application	WB, E, I, LCI
Application Note	This affinity-purified antibody has been tested for use in ELISA and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 52 kDa in size corresponding to GSK3A by western blotting in the appropriate cell lysate or extract. Less than 1% reactivity is observed against the non-phosphorylated form of the immunizing peptide. This antibody is phospho specific for pS21 of GSK3A.
Physical State	Liquid (sterile filtered)
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Immunogen	This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to the N-Terminal region near aa 1-25 of human GSK3 alpha.
Preservative	0.01% (w/v) Sodium Azide

**Anti-GSK3 alpha pS21 (RABBIT) Antibody - Additional Information**

**Gene ID** 2931

**Other Names**  
2931

**Purity**

This affinity-purified antibody is directed against the phosphorylated form of human GSK3A at the pS 21 residue. The product was affinity purified from monospecific antiserum by immunoaffinity purification. Antiserum was first purified against the phosphorylated form of the immunizing peptide. The resultant affinity purified antibody was then cross-adsorbed against the non-phosphorylated form of the immunizing peptide. This phospho specific polyclonal antibody reacts with phosphorylated pS21 of human GSK3A. Reactivity with non-phosphorylated human GSK3A is minimal. A BLAST analysis was used to suggest reactivity with this protein from human,

chimpanzee and rat based on 100% homology for the immunogen sequence. Cross reactivity with GSK3A homologues from other sources has not been determined.

### Storage Condition

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

### Precautions Note

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-GSK3 alpha pS21 (RABBIT) Antibody - Protein Information

**Name** GSK3A

### Function

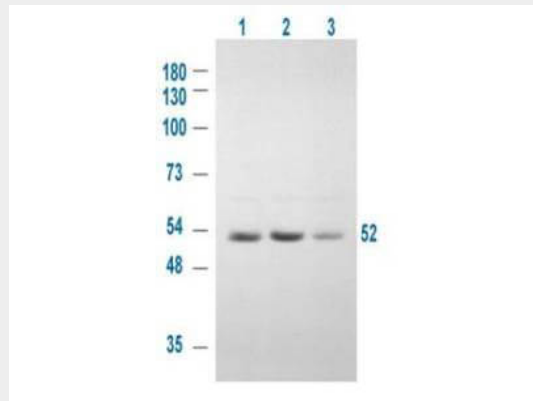
Constitutively active protein kinase that acts as a negative regulator in the hormonal control of glucose homeostasis, Wnt signaling and regulation of transcription factors and microtubules, by phosphorylating and inactivating glycogen synthase (GYS1 or GYS2), CTNNB1/beta-catenin, APC and AXIN1 (PubMed: <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>).

## Anti-GSK3 alpha pS21 (RABBIT) 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](#)

## Anti-GSK3 alpha pS21 (RABBIT) Antibody - Images



Western blot using Rockland's Affinity Purified anti-GSK3A antibody shows detection of a 52 kDa band corresponding to human GSK3A in various human derived 293T cell extracts. Cells were serum starved for 24 h. Lane 1: control, Lane 2: treated with IGF-1 (100 ng/ml) for 20 min, Lane 3: pre-treated with 10  $\mu$ M LY294002 (selective PI3K inhibitor) and treated with IGF-1 (100 ng/ml) for 20 min. Lane 1 shows some baseline GSK3A reactivity that is intensified upon stimulation (lane2) and diminished when an inhibitor is added (lane 3). Approximately 20  $\mu$ g of lysate was run on a SDS-PAGE and transferred onto nitrocellulose followed by reaction with a 1:1,000 dilution of anti-GSK3A antibody. Signal was detected using standard techniques. Personal communication, Angela Carter, Experimental Therapeutics, Ontario Cancer Inst, Toronto, Canada

## Anti-GSK3 alpha pS21 (RABBIT) Antibody - Background

Glycogen synthase kinase 3 alpha (GSK3A) belongs to the ser/thr family of protein kinases, Cdc2/cdkx subfamily; gsk-3 subsubfamily. It is implicated in the hormonal control of several regulatory proteins including glycogen synthase, myb, and the transcription factor c-jun. GSK3A is a proline-directed serine-threonine kinase that was initially identified as a phosphorylating and inactivating glycogen synthase. Two isoforms, alpha (GSK3A) and beta (GSK3B), show a high degree of amino acid homology. GSK3B is involved in energy metabolism, neuronal cell development, and body pattern formation.