

**Anti-GSK3 alpha (pS21) Antibody**  
**Rabbit polyclonal antibody to GSK3 alpha (pS21)**  
**Catalog # AP59572****Specification**

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

Application	<b>WB, IF</b>
Primary Accession	<a href="#">P49840</a>
Other Accession	<a href="#">Q2NL51</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Calculated MW	<b>50981</b>

**Anti-GSK3 alpha (pS21) Antibody - Additional Information****Gene ID** 2931**Other Names**

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

**Target/Specificity**

Recognizes endogenous levels of GSK3 alpha (pS21) protein.

**Dilution**WB~~WB (1/500 - 1/1000), IH (1/100 - 1/200), IF/IC (1/100 - 1/500), IP (1/10 - 1/100)  
IF~~WB (1/500 - 1/1000), IH (1/100 - 1/200), IF/IC (1/100 - 1/500), IP (1/10 - 1/100)**Format**

Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.

**Storage**

Store at -20 °C. Stable for 12 months from date of receipt

**Anti-GSK3 alpha (pS21) 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>)

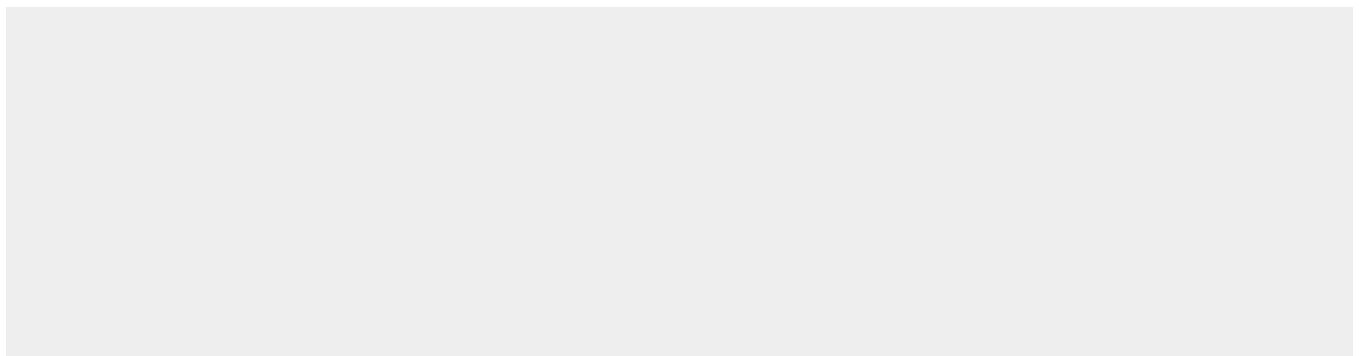
target="\_blank">11749387</a>, PubMed:<a href="http://www.uniprot.org/citations/17478001" target="\_blank">17478001</a>, PubMed:<a href="http://www.uniprot.org/citations/19366350" target="\_blank">19366350</a>). Contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting 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>).

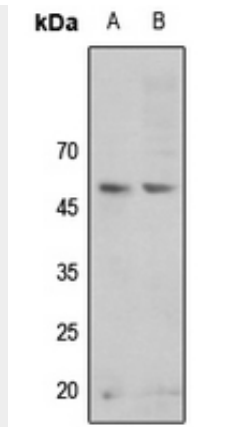
### **Anti-GSK3 alpha (pS21) Antibody - Protocols**

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

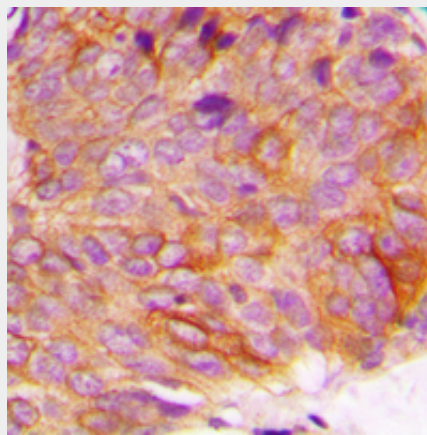
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

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

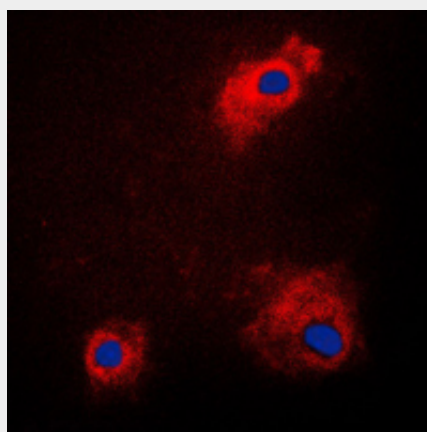




Western blot analysis of GSK3 alpha (pS21) expression in HeLa (A), H466 (B) whole cell lysates.



Immunohistochemical analysis of GSK3 alpha (pS21) staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of GSK3 alpha (pS21) staining in PC12 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary antibody (red) in PBS at room temperature in the dark. DAPI was used to stain the cell nuclei (blue).

**Anti-GSK3 alpha (pS21) Antibody - Background**

KLH-conjugated synthetic peptide encompassing a sequence within the N-term region of human GSK3 alpha. The exact sequence is proprietary.