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Phospho-GSK-3a Antibody
Rabbit Polyclonal Antibody
Catalog # ABV10377

Specification

Phospho-GSK-3a Antibody - Product Information

Application	**WB, IHC**
Primary Accession	P49840
Other Accession	NP_063937
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**50981**

Phospho-GSK-3a Antibody - Additional Information

Gene ID 2931

Application & Usage	**Western blot analysis (1-2 µg/ml), and Immunohistochemistry (20-30 µg/ml). However, the optimal conditions should be determined individually. The phospho-GSK-3α/β (Ser21/9) antibody detects GSK-3 only when phosphorylated at Ser21 of GSK-3α or Ser9 of GSK-3β.**

Other Names
DKFZp686D0638, GSK-3alpha

Target/Specificity
Phospho-GSK-3a

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µg (0.5 mg/ml) affinity-purified rabbit polyclonal phospho-GSK-3a(Ser21/9) polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 50% glycerol, 1% BSA, 0.02% sodium azide.

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
Phospho-GSK-3a Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-GSK-3a 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: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).

Phospho-GSK-3a Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Phospho-GSK-3a Antibody - Images

Phospho-GSK-3a Antibody - Background

GSK-3 is a serine/threonine protein kinase that phosphorylates and inactivates glycogen synthase. GSK-3 has been implicated in the regulation of cell fate and in the Wnt signaling pathway. GSK-3 plays an important role in the PI3 kinase and Akt mediated cell survival pathways, and its activity can be inhibited by Akt-mediated phosphorylation at Ser21 of GSK-3α and Ser9 of GSK-3β.