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GSK3 alpha (GSK3A) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8120B

Product Information

Application	IHC-P, WB, E
Primary Accession	P49840
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB3819/3820
Antigen Region	448-478

Additional Information

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	IHC-P~~1:100~500 WB~~1:1000 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.

Protein Information

Background

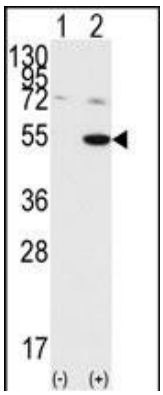
Glycogen synthase kinase 3-alpha (GSK3A)is a multifunctional protein serine kinase implicated in the control of several regulatory proteins including glycogen synthase and transcription factors. It also plays a role in the WNT and PI3K signaling pathways.1 Under resting conditions GSK3A and its homologs are highly phosphorylated at tyr279 in the phosphorylation loop.2 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 ser21.3

Lysophosphatidic acid primarily utilizes a PKC-dependent pathway to modulate GSK3 and certain growth factors (e.g., PDGFB), which control GSK3 mainly through PIK3-PKB, are able to regulate GSK3 through an alternative, redundant phospholipase-C-gamma-PKC pathway.4 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.5 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.

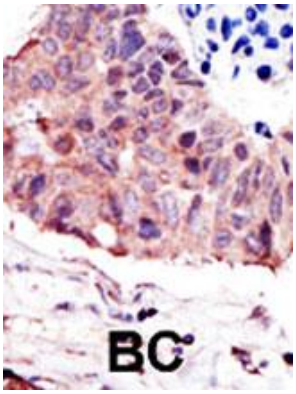
References

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

Images



Western blot analysis of GSK3A (arrow) using GSK3A Antibody (C-term) (Cat.#AP8120b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the GSK3A gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- HNF4α is a therapeutic target that links AMPK to WNT signalling in early-stage gastric cancer.