SANTA CRUZ BIOTECHNOLOGY, INC.

GSK-3β (H-76): sc-9166

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glycogen synthase kinase 3, or GSK-3, is a serine/threonine, proline-directed kinase involved in a diverse array of signaling pathways, including glycogen synthesis and cellular adhesion, and has been implicated in Alzheimer's disease. Two forms of GSK-3, designated GSK-3α and GSK-3β, have been identified and differ in their subcellular localization. Tau, a microtubule-binding protein which serves to stabilize microtubules in growing axons, is found to be hyperphosphorylated in paired helical filaments (PHF), the major fibrous component of neurofibrillary lesions associated with Alzheimer's disease. Hyperphosphorylation of Tau is thought to be the critical event leading to the assembly of PHF. Six Tau protein isoforms have been identified, all of which are phosphorylated by GSK-3. This presents the possibility that miscues in GSK-3 signaling contribute to the onset of Alzheimer's disease.

CHROMOSOMAL LOCATION

Genetic locus: GSK3B (human) mapping to 3q13.33; Gsk3b (mouse) mapping to 16 B3.

SOURCE

GSK-3β (H-76) is a rabbit polyclonal antibody raised against amino acids 345-420 mapping at the C-terminus of GSK-3β of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GSK-3β (H-76) is recommended for detection of GSK-3β of mouse, rat, human, *Xenopus laevis* and zebrafish origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GSK-3β (H-76) is also recommended for detection of GSK-3β in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GSK-3β siRNA (h): sc-35527, GSK-3β siRNA (m): sc-35525, GSK-3β shRNA Plasmid (h): sc-35527-SH, GSK-3β shRNA Plasmid (m): sc-35525-SH, GSK-3β shRNA (h) Lentiviral Particles: sc-35527-V and GSK-3β shRNA (m) Lentiviral Particles: sc-35525-V.

Molecular Weight of GSK-3β: 47 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

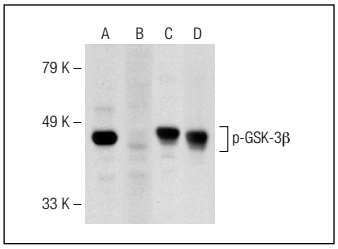
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

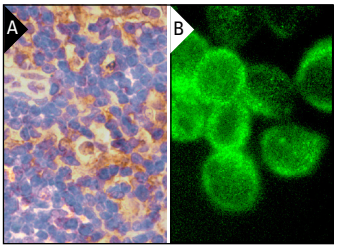
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Western blot analysis of GSK-3β phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) HeLa whole cell lysates. Antibodies tested include p-GSK-3β (F-2): sc-373800 (**A**,**B**) and GSK-3β (H-76): sc-9166 (**C**,**D**).



GSK-3β (H-76): sc-9166. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse thymus tissue (**A**). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Xiao, J.H., et al. 2003. Adenomatous polyposis coli (APC)-independent regulation of β-catenin degradation via a retinoid X receptor-mediated pathway. J. Biol. Chem. 278: 29954-29962.
2. Kavitha, K., et al. 2012. Nimbolide, a neem limonoid abrogates canonical NFκB and Wnt signaling to induce caspase-dependent apoptosis in human hepatocarcinoma (HepG2) cells. Eur. J. Pharmacol. 681: 6-14.
3. Vergara, D., et al. 2012. Resveratrol downregulates Akt/GSK and ERK signalling pathways in OVCAR-3 ovarian cancer cells. Mol. Biosyst. 8: 1078-1087.
4. Lin, S.Y., et al. 2012. GSK3-TIP60-ULK1 signaling pathway links growth factor deprivation to autophagy. Science 336: 477-481.
5. Dedoni, S., et al. 2012. Type I interferons impair BDNF-induced cell signaling and neurotrophic activity in differentiated human SH-SY5Y neuroblastoma cells and mouse primary cortical neurons. J. Neurochem. 122: 58-71.
6. Zhu, T., et al. 2012. Pyrrolidine dithiocarbamate enhances hepatic glycogen synthesis and reduces FoxO1-mediated gene transcription in type 2 diabetic rats. Am. J. Physiol. Endocrinol. Metab. 302: E409-E416.
7. Kim, K.J., et al. 2012. A chemical genomics screen to discover genes that modulate neural stem cell differentiation. J. Biomol. Screen. 17: 129-139.
8. Siddavaram, N., et al. 2012. Chlorophyllin abrogates canonical Wnt/β-catenin signaling and angiogenesis to inhibit the development of DMBA-induced hamster cheek pouch carcinomas. Cell. Oncol. 35: 385-395.