SANTA CRUZ BIOTECHNOLOGY, INC.

GSK-3α (C-20): sc-1844

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 hyper-phosphorylated in paired helical filaments (PHF), the major fibrous component of neurofibrillary lesions associated with Alzheimer's disease. Hyper-phosphorylation 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.

REFERENCES

1. Pugazhenthi, S., et al. 1995. Regulation of glycogen synthase activation in isolated hepatocytes. Mol. Cell. Biochem. 149-150: 95-101.
2. Pelech, S.L. 1995. Networking with proline-directed protein kinases implicated in Tau phosphorylation. Neurobiol. Aging 16: 247-256.
3. Hoshi, M., et al. 1995. Different localization of Tau protein kinase I/glycogen synthase kinase-3β from glycogen synthase kinase-3α in cerebellum mitochondria. J. Biochem. 118: 683-685.
4. Sperber, B.R., et al. 1995. Glycogen synthase kinase-3β phosphorylates Tau protein at multiple sites in intact cells. Neurosci. Lett. 197: 149-153.

CHROMOSOMAL LOCATION

Genetic locus: GSK3A (human) mapping to 19q13.2; Gsk3a (mouse) mapping to 7 A3.

SOURCE

GSK-3α (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GSK-3α 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.

Blocking peptide available for competition studies, sc-1844 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-1844 AC, 500 µg/0.25 ml agarose in 1 ml.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

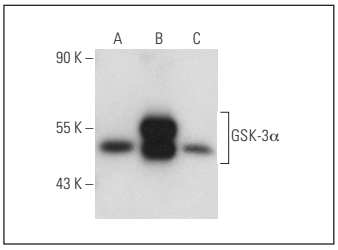
GSK-3α (C-20) is recommended for detection of GSK-3α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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).

Suitable for use as control antibody for GSK-3α siRNA (h): sc-29339, GSK-3α siRNA (m): sc-35526, GSK-3α shRNA Plasmid (h): sc-29339-SH, GSK-3α shRNA Plasmid (m): sc-35526-SH, GSK-3α shRNA (h) Lentiviral Particles: sc-29339-V and GSK-3α shRNA (m) Lentiviral Particles: sc-35526-V.

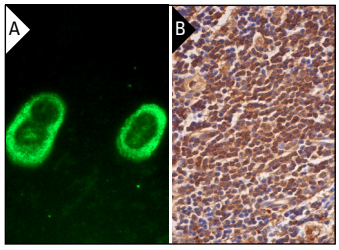
Molecular Weight of GSK-3α: 51 kDa.

Positive Controls: GSK-3α (h3): 293T Lysate: sc-176245, A-431 whole cell lysate: sc-2201 or Jurkat whole cell lysate: sc-2204.

DATA



GSK-3α (C-20): sc-1844. Western blot analysis of GSK-3α expression in non-transfected 293T: sc-117752 (**A**), human GSK-3α transfected 293T: sc-176245 (**B**) and Jurkat (**C**) whole cell lysates.



GSK-3α (C-20): sc-1844. Immunofluorescence staining of methanol-fixed A-431 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of cells in germinal centers and cells in non-germinal centers (**B**).

SELECT PRODUCT CITATIONS

1. Koivisto, L., et al. 2006. HaCaT keratinocyte migration is dependent on epidermal growth factor receptor signaling and glycogen synthase kinase-3α. Exp. Cell Res. 312: 2791-2805.
2. Escribano, C., et al. 2009. CCR7-dependent stimulation of survival in dendritic cells involves inhibition of GSK3β. J. Immunol. 183: 6282-6295.

RESEARCH USE

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