

GSK-3 α (R-20): sc-1846

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-3 α and GSK-3 β , 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. Pugazhenth, 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.

CHROMOSOMAL LOCATION

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

SOURCE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-1846 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GSK-3 α (R-20) is recommended for detection of GSK-3 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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-3 α siRNA (h): sc-29339, GSK-3 α siRNA (m): sc-35526, GSK-3 α shRNA Plasmid (h): sc-29339-SH, GSK-3 α shRNA Plasmid (m): sc-35526-SH, GSK-3 α shRNA (h) Lentiviral Particles: sc-29339-V and GSK-3 α shRNA (m) Lentiviral Particles: sc-35526-V.

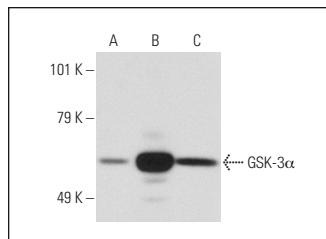
Molecular Weight of GSK-3 α : 51 kDa.

Positive Controls: GSK-3 α (h3): 293T Lysate: sc-176245, Jurkat whole cell lysate: sc-2204 or A549 cell lysate: sc-2413.

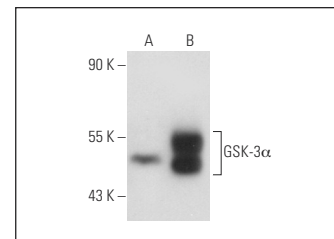
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

DATA



GSK-3 α (R-20): sc-1846. Western blot analysis of GSK-3 α expression in non-transfected 293T: sc-117752 (A), human GSK-3 α transfected 293T: sc-116382 (B) and Jurkat (C) whole cell lysates.



GSK-3 α (R-20): sc-1846. Western blot analysis of GSK-3 α expression in non-transfected: sc-117752 (A) and human GSK-3 α transfected: sc-176245 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Freeburn, R.W., et al. 2002. Evidence that SHIP-1 contributes to phosphatidylinositol 3,4,5-trisphosphate metabolism in T lymphocytes and can regulate novel phosphoinositide 3-kinase effectors. *J. Immunol.* 169: 5441-5450.

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.

PROTOCOLS

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



Try **GSK-3 α / β (0011-A): sc-7291** or **GSK-3 α (H-12): sc-5264**, our highly recommended monoclonal alternatives to GSK-3 α (R-20). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **GSK-3 α / β (0011-A): sc-7291**.