

GSK-3 β siRNA (h): sc-35527

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. 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 misuses in GSK-3 signaling contribute to the onset of Alzheimer's disease.

CHROMOSOMAL LOCATION

Genetic locus: GSK3B (human) mapping to 3q13.33.

PRODUCT

GSK-3 β siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GSK-3 β shRNA Plasmid (h): sc-35527-SH and GSK-3 β shRNA (h) Lentiviral Particles: sc-35527-V as alternate gene silencing products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GSK-3 β siRNA (h) is recommended for the inhibition of GSK-3 β expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RESEARCH USE

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

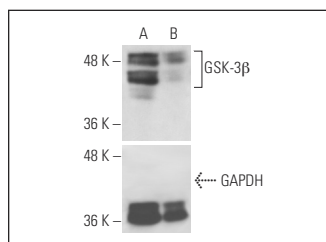
GENE EXPRESSION MONITORING

GSK-3 β (E-11): sc-377213 is recommended as a control antibody for monitoring of GSK-3 β gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GSK-3 β gene expression knockdown using RT-PCR Primer: GSK-3 β (h)-PR: sc-35527-PR (20 μ l, 438 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



GSK-3 β siRNA (h): sc-35527. Western blot analysis of GSK-3 β expression in non-transfected control (A) and GSK-3 β siRNA transfected (B) HeLa cells. Blot probed with GSK-3 β (0011-A): sc-7291. GAPDH (FL-335): sc-25778 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Tsuchiya, K., et al. 2007. Reciprocal targeting of Hath1 and β -catenin by Wnt glycogen synthase kinase 3 β in human colon cancer. *Gastroenterology* 132: 208-220.
2. Yang, S., et al. 2017. Idelalisib induces PUMA-dependent apoptosis in colon cancer cells. *Oncotarget* 8: 6102-6113.
3. Vashishtha, V., et al. 2018. Antagonistic role of GSK-3 isoforms in glioma survival. *J. Cancer* 9: 1846-1855.
4. Zhang, D., et al. 2019. HPCAL1 promotes glioblastoma proliferation via activation of Wnt/ β -catenin signalling pathway. *J. Cell. Mol. Med.* 23: 3108-3117.
5. Yang, S., et al. 2020. Cabozantinib induces PUMA-dependent apoptosis in colon cancer cells via AKT/GSK-3 β /NF κ B signaling pathway. *Cancer Gene Ther.* 27: 368-377.
6. Mishra, M., et al. 2021. FBW7 inhibits myeloid differentiation in acute myeloid leukemia via GSK-3-dependent ubiquitination of PU.1. *Mol. Cancer Res.* 19: 261-273

PROTOCOLS

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