

# GSK-3 $\beta$ (E-11): sc-377213

## 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 $\alpha$  and GSK-3 $\beta$ , 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 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-3 $\beta$  (E-11) is a mouse monoclonal antibody raised against amino acids 345-420 mapping at the C-terminus of GSK-3 $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GSK-3 $\beta$  (E-11) is available conjugated to agarose (sc-377213 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377213 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377213 PE), fluorescein (sc-377213 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377213 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377213 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377213 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377213 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377213 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377213 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

GSK-3 $\beta$  (E-11) is recommended for detection of GSK-3 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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-3 $\beta$  siRNA (h): sc-35527, GSK-3 $\beta$  siRNA (m): sc-35525, GSK-3 $\beta$  siRNA (r): sc-270460, GSK-3 $\beta$  shRNA Plasmid (h): sc-35527-SH, GSK-3 $\beta$  shRNA Plasmid (m): sc-35525-SH, GSK-3 $\beta$  shRNA Plasmid (r): sc-270460-SH, GSK-3 $\beta$  shRNA (h) Lentiviral Particles: sc-35527-V, GSK-3 $\beta$  shRNA (m) Lentiviral Particles: sc-35525-V and GSK-3 $\beta$  shRNA (r) Lentiviral Particles: sc-270460-V.

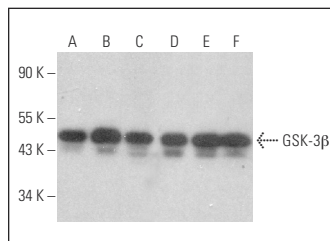
Molecular Weight of GSK-3 $\beta$ : 47 kDa.

Positive Controls: A549 cell lysate: sc-2413 or Hep G2 cell lysate: sc-2227.

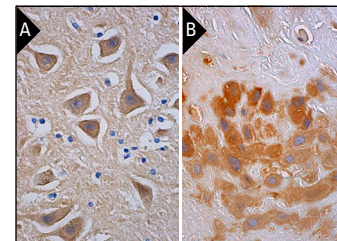
## STORAGE

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

## DATA



GSK-3 $\beta$  (E-11): sc-377213. Western blot analysis of GSK-3 $\beta$  expression in Hep G2 (A), MCF7 (B), SK-BR-3 (C), A549 (D), A-431 (E) and K-562 (F) whole cell lysates.



GSK-3 $\beta$  (E-11): sc-377213. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of decidual cells (B).

## SELECT PRODUCT CITATIONS

- Cwiek, P., et al. 2015. RNA interference screening identifies a novel role for PCTK1/Cdk16 in medulloblastoma with c-Myc amplification. *Oncotarget* 6: 116-129.
- Wang, K., et al. 2016. Chronic administration of *Angelica sinensis* polysaccharide effectively improves fatty liver and glucose homeostasis in high-fat diet-fed mice. *Sci. Rep.* 6: 26229.
- Li, F.F., et al. 2018. Alterations in  $\beta$ -catenin/E-cadherin complex formation during the mechanotransduction of Saos-2 osteoblastic cells. *Mol. Med. Rep.* 18: 1495-1503.
- Wang, P., et al. 2019. Wip1 cooperates with KPNA2 to modulate the cell proliferation and migration of colorectal cancer via a p53-dependent manner. *J. Cell. Biochem.* 120: 15709-15718.
- Guo, L. and Yang, T. 2019. Oxymatrine inhibits the proliferation and invasion of breast cancer cells via the PI3K pathway. *Cancer Manag. Res.* 11: 10499-10508.
- Sathyamoorthy, Y., et al. 2020. Glycyrrhizic acid renders robust neuroprotection in rodent model of vascular dementia by controlling oxidative stress and curtailing cytochrome-c release. *Nutr. Neurosci.* 23: 955-970.
- Strappazon, F., et al. 2020. HUWE1 controls MCL1 stability to unleash AMBRA1-induced mitophagy. *Cell Death Differ.* 27: 1155-1168.
- Ciotti, S., et al. 2020. GSK3 $\beta$  is a key regulator of the ROS-dependent necrotic death induced by the quinone DMNQ. *Cell Death Dis.* 11: 2.
- Tramutola, A., et al. 2020. Brain insulin resistance triggers early onset Alzheimer disease in Down syndrome. *Neurobiol. Dis.* 137: 104772.

## RESEARCH USE

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

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