SANTA CRUZ BIOTECHNOLOGY, INC.

p-GSK-3β (F-2): sc-373800

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glycogen synthase kinase-3α (GSK-3α) and GSK-3β are highly similar isoforms of serine/threonine kinases that regulate metabolic enzymes and transcription factors, which are responsible for coordinating processes such as glycogen synthesis and cell adhesion. GSK-3β activity is also required for nuclear activity of Rel dimers, which mediate an anti-apoptotic response to TNFα in mice. GSK-3 catalytic kinase activity is controlled through differential phosphorylation of serine/threonine residues, which have an inhibitory effect, and tyrosine residues, which have an activating effect. Growth factor stimulation of mammalian cells expressing GSK-3α and GSK-3β induces phos-phorylation of Ser 21 and Ser 9, respectively, through a phosphatidylinositol 3-kinase (PI 3-K)-protein kinase B (PKB)-dependent pathway, thereby enhancing proliferative signals. Additionally, GSK-3 physically associates with cAMP-dependent protein kinase A (PKA), which phosphorylates Ser 21 of GSK-3α or Ser 9 of GSK-3β and inactivates both forms. GSK-3α/β is positively regulated by phosphorylation on Tyr 279 and Tyr 216, respectively. Activated GSK-3α/β participates in energy metabolism, neuronal cell development, and body pattern formation. Tyrosine dephosphorylation of GSK-3 is involved in its extracellular signal-dependent inactivation.

CHROMOSOMAL LOCATION

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

SOURCE

p-GSK-3β (F-2) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Ser 9 phosphorylated GSK-3β of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-GSK-3β (F-2) is available conjugated to agarose (sc-373800 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373800 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373800 PE), fluorescein (sc-373800 FITC), Alexa Fluor® 488 (sc-373800 AF488), Alexa Fluor® 546 (sc-373800 AF546), Alexa Fluor® 594 (sc-373800 AF594) or Alexa Fluor® 647 (sc-373800 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373800 AF680) or Alexa Fluor® 790 (sc-373800 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373800 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

p-GSK-3β (F-2) is recommended for detection of Ser 9 phosphorylated GSK-3β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

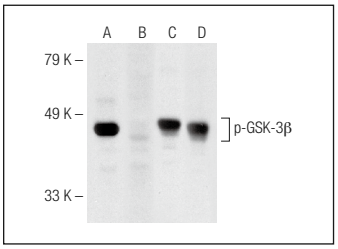
p-GSK-3β (F-2) is also recommended for detection of correspondingly phosphorylated GSK-3β in additional species, including equine, canine, bovine, porcine and avian.

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.

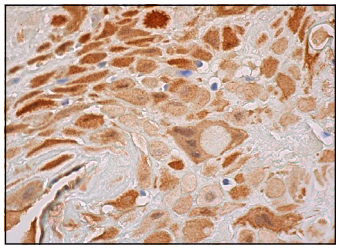
Molecular Weight of p-GSK-3β: 47 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or NIH/3T3 whole cell lysate: sc-2210.

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**).



p-GSK-3β (F-2): sc-373800. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of decidual cells.

SELECT PRODUCT CITATIONS

1. Kajabadi, N.S., et al. 2015. The synergistic enhancement of cloning efficiency in individualized human pluripotent stem cells by peroxisome proliferative-activated receptor-γ (PPARγ) activation and Rho-associated kinase (ROCK) inhibition. J. Biol. Chem. 290: 26303-26313.
2. Li, F.F., et al. 2018. Alterations in β-catenin/E-cadherin complex formation during the mechanotransduction of Saos-2 osteoblastic cells. Mol. Med. Rep. 18: 1495-1503.
3. Zheng, S., et al. 2019. MIR31HG promotes cell proliferation and invasion by activating the Wnt/β-catenin signaling pathway in non-small cell lung cancer. Oncol. Lett. 17: 221-229.
4. Lee, D.H., et al. 2020. Increased O-GlcNAcylation of c-Myc promotes Pre-B cell proliferation. Cells 9: 158.

RESEARCH USE

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