p-GSK-3β (2D3): sc-81494

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 phosphorylation 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 (2D3) is a mouse monoclonal antibody raised against a phosphopeptide corresponding to amino acid residues surrounding Ser 9 of GSK-3β of human origin.

PRODUCT
Each vial contains 50 µg IgG1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS
p-GSK-3β (2D3) is recommended for detection of Ser 9 phosphorylated GSK-3β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]. 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-35627-SH, GSK-3β shRNA Plasmid (m): sc-35625-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: GSK-3β (m): 293T Lysate: sc-20654, NIH/3T3 whole cell lysate: sc-2210 or NIH/3T3 + PDGF cell lysate: sc-3803.

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.

DATA

Western blot analysis of GSK-3β phosphorylation in non-transfected: sc-117752 (A), untreated mouse GSK-3β transfected: sc-120654 (B) and lambda protein phosphatase treated mouse GSK-3β transfected: sc-120654 (C, F) 293T whole cell lysates. Antibodies tested include p-GSK-3β (D,E), sc-81494 (A,B,C) and GSK-3β (F) sc-5935 (E,F).

SELECT PRODUCT CITATIONS

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