

# Anti-Glycogen Synthase Kinase-3 $\beta$

Cat. # **GM1311**  
Host **Mouse Monoclonal IgG1**  
Size **100 $\mu$ l**

## **Background:**

Glycogen synthase kinase-3 (GSK-3) has been implicated in fundamental cell processes such as cell fate determination, metabolism, transcriptional control, and oncogenesis. Two GSK-3 genes ( $\alpha$  and  $\beta$ ) have been cloned in mammals and these kinase homologues show strong sequence conservation within their catalytic domain. GSK-3 $\beta$  plays a critical role in cell survival by phosphorylating nuclear factor- $\kappa$ B (NF- $\kappa$ B) p65 subunit, leading to NF- $\kappa$ B transactivation in hepatocytes. Phosphorylation regulates the activity of both GSK-3 genes. MEK1/2 can phosphorylate tyrosine 216 (tyrosine 279 in GSK-3 $\alpha$ ), which stimulates GSK-3 kinase activity. Tyr-216 phosphorylation is required for GSK-mediated down-regulation of  $\beta$ -catenin activity. Also, TRAIL stimulation can increase Tyr-216 phosphorylation, and GSK-3 $\beta$  activity may suppress TRAIL-induced apoptosis. Inactivation of GSK-3 occurs through Akt phosphorylation of serine 9 of GSK-3 $\beta$  (Serine 21 in GSK-3 $\alpha$ ). This phosphorylation may be involved in later phases of neuronal apoptosis.

## **References:**

Hagen, T. et al. (2002) J Biol Chem. 277(26):23330.  
Takahashi-Yanaga, F. et al. (2004) Biochem Biophys Res Commun. 316(2):411.  
Xinbo, L. et al. (2003) Mol Cancer Ther. 2:1215.

## **Immunogen:**

Clone M131 was generated from a recombinant protein containing amino acid residues in the N-terminal region of human GSK-3 $\beta$ . This sequence is highly conserved in rat and mouse GSK-3 $\beta$ , but has low homology to GSK-3 $\alpha$ .

## **Buffer and Storage:**

Mouse monoclonal purified with protein A chromatography is supplied in 100 $\mu$ l phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at  $-20^{\circ}\text{C}$ . Do not aliquot. Stable for 1 year.

## **Applications:**

Western blotting                      1:2000 dilution<sup>†</sup>                      Immunohistochemistry                      1:1000  
ELISA                                      1:4000 dilution

End user should determine optimal dilution for their particular applications and experiments.

<sup>†</sup>Membrane was incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

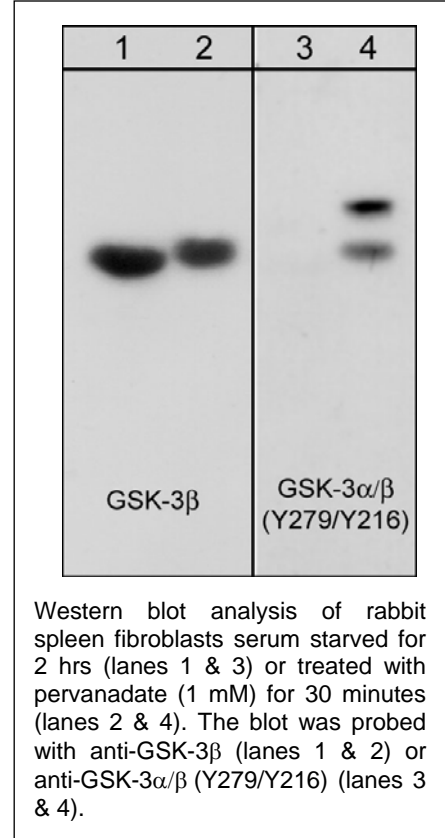
## **Specificity:**

This antibody detects a 46 kDa\* protein corresponding to the apparent molecular mass of GSK-3 $\beta$  on SDS-PAGE immunoblots of rabbit fibroblasts, mouse brain, as well as human SKN-SH and A431 cells.

\*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

## **Related Products:**

GM1321 GSK-3 $\alpha/\beta$  (Tyr-279/Tyr-216), phospho-specific Mouse Monoclonal  
AL9401 A431 Pervanadate Control Lysate                      AL9501 A431 + Pervanadate Lysate



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