

# Anti-GSK-3α/β (Tyr-279/Tyr-216), Phosphospecific Antibody Catalog # AN1807

## **Specification**

# Anti-GSK-3α/β (Tyr-279/Tyr-216), Phosphospecific Antibody - Product Information

Primary Accession
Reactivity
Bovine
Host
Mouse

Clonality Mouse Monoclonal

Isotype IgG1
Calculated MW 50981

## Anti-GSK-3α/β (Tyr-279/Tyr-216), Phosphospecific Antibody - Additional Information

Gene ID 2931

**Other Names** 

Glycogen synthase kinase beta3

#### **Target/Specificity**

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. Inactiviation 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.

#### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

#### **Precautions**

Anti-GSK- $3\alpha/\beta$  (Tyr-279/Tyr-216), Phosphospecific Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

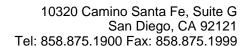
#### **Shipping**

Blue Ice

## Anti-GSK-3α/β (Tyr-279/Tyr-216), Phosphospecific Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

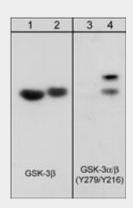
Western Blot





- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- Immunofluorescence
- <u>Immunoprecipitation</u>
- Flow Cytomety
- Cell Culture

# Anti-GSK-3α/β (Tyr-279/Tyr-216), Phosphospecific Antibody - Images



Western blot analysis of rabbit spleen fibroblasts serum starved for 2 hrs (lanes 1 & 3) or treated with pervanadate (1 mM) for 30 minutes (lanes 2 & 4). The blot was probed with anti-GSK-3 $\beta$  (lanes 1 & 2) or anti-GSK-3 $\alpha/\beta$  (Y279/Y216) (lanes 3 & 4).

## Anti-GSK-3α/β (Tyr-279/Tyr-216), Phosphospecific Antibody - 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. Inactiviation 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.