Product datasheet

Anti-GSK3 (alpha + beta) (phospho Y216 + Y279) antibody ab4797

Overview

Product name: Anti-GSK3 (alpha + beta) (phospho Y216 + Y279) antibody
Description: Rabbit polyclonal to GSK3 (alpha + beta) (phospho Y216 + Y279)
Host species: Rabbit
Tested applications: Suitable for: WB
Species reactivity: Reacts with: Mouse, Rat, Human
Immunogen: Synthetic peptide derived from the regions of GSK 3 alpha + beta protein that contain tyrosine 216/279.

General notes

Glycogen synthase kinase-3 (GSK 3) is a proline-directed serine-threonine kinase that was initially identified as a phosphorylating and inactivating glycogen synthase. Two isoforms, alpha (GSK 3A) and beta, show a high degree of amino acid homology. GSK 3B is involved in energy metabolism, neuronal cell development, and body pattern formation.

Properties

Form: Liquid
Storage instructions: Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer: pH: 7.40
Constituent: PBS
Purity: Immunogen affinity purified
Purification notes: Purified from rabbit serum by epitope specific affinity chromatography. Any reactivity towards the non-tyrosine phosphorylated GSK 3 alpha + beta protein has been eliminated through a series of preabsorption steps.
Primary antibody notes: Glycogen synthase kinase-3 (GSK 3) is a proline-directed serine-threonine kinase that was initially identified as a phosphorylating and inactivating glycogen synthase. Two isoforms, alpha (GSK 3A) and beta, show a high degree of amino acid homology. GSK 3B is involved in energy metabolism, neuronal cell development, and body pattern formation.
Clonality: Polyclonal
**Isotype**

IgG

**Applications**

Our **Abpromise guarantee** covers the use of **ab4797** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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<th>Application</th>
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<th>Notes</th>
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<tbody>
<tr>
<td>WB</td>
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<td>Use a concentration of 0.5 - 1 µg/ml. Predicted molecular weight: 51.47 kDa. Use at a concentration of 0.5 - 1.0 µg/ml. Predicted molecular weight: 51kDa for GSK 3 alpha and 47 kDa for GSK 3 beta.</td>
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**Target**

**Relevance**

Glycogen synthase kinase 3 (GSK3) is a proline directed serine threonine kinase that was initially identified as a phosphorylating and inactivating glycogen synthase, a key enzyme in glycogen metabolism. Since then, it has been shown to be involved in the regulation of a diverse array of cellular functions, including protein synthesis, cell proliferation, cell differentiation, microtubule assembly/disassembly, and apoptosis. GSK3s substrate specificity is unique in that phosphorylation of substrate only occurs if a phosphoserine or phosphotyrosine is present four residues C terminal to the site of GSK phosphorylation. There exists two isoforms of GSK3, alpha and beta, and they show a high degree of amino acid homology. The two isoforms of GSK3 are strictly regulated via phosphorylation. Phosphorylation of GSK3 beta on Ser9 (Ser21 in GSK3 alpha) by protein kinase B (PKB) causes its inactivation is the primary mechanism responsible for growth factor inhibition of this kinase. Activation of GSK3 beta is dependent upon the phosphorylation of Tyr216 (Tyr279 in GSK3 alpha). Upon activation, it has been shown to phosphorylate a number of different cellular proteins, including p53, c-Myc, c-Jun, heat shock factor 1 (HSF1), and cyclin D1. GSK3 beta also has been shown to phosphorylate aberrant sites on the microtubule associated protein tau, which is critical for the progression of Alzheimer’s disease. GSK3B is involved in energy metabolism, neuronal cell development, and body pattern formation.

**Cellular localization**

Cytoplasmic and Nuclear

**Images**
Extracts of 3T3L1 cells stimulated with 100 nM insulin for 10 minutes were resolved by SDS-PAGE on a 10% Tris-glycine gel and transferred to PVDF. The membrane was blocked with a 5% BSA-TBST buffer for one hour at room temperature and either left untreated (1-4) or treated with lambda (λ) phosphatase (5), then incubated with the GSK-3 α [pY279] / β [pY216] antibody for two hours at room temperature in a 1% BSATBST buffer, following its prior incubation with: the phosphopeptide immunogen (1), no peptide (2), the non-phosphopeptide corresponding to the phosphopeptide immunogen (3), or a generic phosphotyrosine-containing peptide (4). After washing, the membrane was incubated with goat F(ab’)2 anti-rabbit IgG HRP conjugate, and signals were detected. The data show that only the phosphopeptide corresponding to GSK-3α [pY279] / β[pY216] blocks the antibody signal, demonstrating the specificity of the antibody. The data also show that phosphatase stripping eliminates the signal, further verifying that the antibody is phospho-specific.

Please note: All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES”

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