ProductInformation

Anti-Serine/Threonine Protein Phosphatase 1 β
Developed in Rabbit,
Affinity Isolated Antibody

Product Number **P7484**

Product Description

Anti-Serine/Threonine Protein Phosphatase 1 β is developed in rabbit using a highly purified peptide PRTANPPKKR corresponding to the C-terminus of the protein phosphatase 1 β catalytic subunit (amino acid residues 318-327) as the immunogen. This sequence is homologous in human, rat and rabbit. The antiserum was affinity isolated on immobilized immunogen.

Anti-Serine/Threonine Protein Phosphatase 1 β recognizes protein phosphatase 1 β isoforms from human, mouse, rat and bovine by immunoblotting (37kDa) and immunoprecipitation. It should be noted that mammalian PP1 β is also known as PP 1 δ.

The balance between protein kinase and phosphatase activities is responsible for controlling the level of protein phosphorylation and is a central mechanism controlling a wide range of cellular processes. Protein phosphatases are present in all eukaryotic cells and regulate several cellular processes among them cell-cycle progression, transcriptional regulation, cell growth, differentiation and apoptosis. The serine/ threonine phosphatases have been classified into four groups which include PP1, PP2A, PP2B (also termed calcineurin) and PP2C on the basis of differences in their biochemical properties.[1,2] Protein phosphatase 1, 2A and 2B are highly homologous members of the same family, but differ in their substrate specificity and interaction with regulatory molecules.[2,3] PP2C appears to belong to an unrelated family.[4] Protein phosphatase 1 (PP1), (36 kD protein) is widely distributed in mammalian tissues with the highest expression in specific areas of the brain,[5,6] and has a broad range of substrate specificity *in vitro*. PP1 is involved in the regulation of glycogen metabolism, muscle contractility, cell cycle and growth, protein synthesis and neuronal metabolism. In neurons, PP1 appears to play a key role in synaptic plasticity and long term depression (LTD).[7,8] Three PP1 isoforms (α, β and γ1) have been identified that display a high degree (90%) of sequence homology. Protein phosphatase 1 is subject to complex regulation. The catalytic subunit of PP1 normally forms heterodimers with "regulatory" subunits that in turn modulate PP1 activity directly and/or by targeting PP1 to specific subcellular locations.[2] At least three different heat-stable inhibitors of PP1 are known to exist in mammalian cells including inhibitor 1, inhibitor 2 and DARPP-32.[9,10] In turn, these regulatory subunits can be phosphorylated and/or dephosphorylated in response to extracellular stimuli and thus dynamically regulate the activity of PP1.

PP1β is expressed in brain and muscle. In Drosophila, PP1β appears to be important for maintaining muscle attachments as it associates with microtubules in a discrete area of the soma.[11,12]

Reagents

Anti-Serine/Threonine Protein Phosphatase 1 β is supplied as 100 µg of affinity isolated antibody in 100µ l of Phosphate buffered saline with 0.08% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

Antibodies should be stored at –20°C. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1:500 to 1:1000 for immunoblotting using total rat brain homogenate and peroxidase conjugated goat anti-rabbit IgG with detection by ECL.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations,

we recommend determining optimal working dilutions by titration test.

References

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