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ProductInformation

ANTI-CHAPSYN-110
Developed in Rabbit, IgG Fraction of Antiserum

Product Number **C4598**

Product Description

Anti-Chapsyn-110 is developed in rabbit using a highly purified fusion protein of *Schistosoma japonicum* glutathione-S-transferase (GST)[1] and residues 336-379 of rat chapsyn-110,[2,3] The serum was depleted of anti-GST antibodies by affinity chromatography on an immobilized, non-relevant GST fusion protein, and then the IgG fraction was isolated on immobilized protein A.

Anti-Chapsyn-110 recognizes chapsyn-110 protein in rat by immunoblotting.

Chapsyn-110/Postsynaptic density-93 (PSD-93), a member of the membrane-associated guanylate kinase (MAGUK) family of PDZ domain containing-proteins, was isolated in a screen to identify possible mechanisms for efficient coupling of calcium influx through NMDA-type glutamate receptors to neuronal nitric oxide sythase (nNOS) activity. Chapsyn-110 exhibits a somatodendritic expression pattern that is similar to PSD-95[3], but tissue-specific splice-variants are expressed in non-neuronal cells as well. Chapsyn-110, like PSD-95, binds to nNOS and to the NMDA receptor 2B. However, Chapsyn-110, is unique among PSD-95/SAP-90 family members in its expression in Purkinje neuron cell-bodies and dendrites.[2]

MAGUKs are widely expressed in the brain and are critical elements of the cytoskeleton and certain synapses. MAGUKs contain classical protein-protein interaction motifs, including three N-terminal PDZ domains and an SH3 domain and they appear to regulate synaptic function by mediating specific protein-protein interactions. MAGUKs also have a C-terminal region homologous to guanylate cyclase (GK), which, however, lacks apparent enzymatic activity.[4]

Most biochemical studies have focused on the PDZ domains, which bind the C-terminal tails of ion channels, including NMDA receptor subunits[5] and Shaker type K^+ channels,[6] a signaling enzyme SynGAP,[7] and the microtubule-associated proteins adenomas polyposis coli (APC)[8] and CRIPT.[9] The second PDZ motif of neuronal MAGUKs also binds neuronal nitric oxide synthase.[10] These PDZ domain interactions may mediate ion channel[6] clustering and may link synaptic receptors downstream to effectors.[10] Investigation of mechanisms for the association of MAGUKs with the neuronal cytoskeleton have identified a high-affinity interaction of the GK domain of neuronal MAGUKs with microtubule-associated protein 1A (MAP1A), a major constituent of neuronal microtubules. Full-length MAGUKs do not bind as effectively as isolated GK domains due to autoinhibition by the PDZ domain. Displacement of the PDZ domain, mediated by ligands to the PDZ domains, stimulates GK binding activity of the full-length protein suggesting that PDZ domain occupation may modulate GK action in MAGUK proteins, facilitating their proper targeting and function.[4]

Reagents

Anti-Chapsyn-110 is supplied as IgG, lyophilized at 1.0 mg/ml from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin, 5% sucrose, and 0.025% 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.

Preparation Instructions

Reconstitute the lyophilized vial with 0.05 ml or 0.2 ml deionized water, depending on the package size purchased. Antibody dilutions should be made in buffer containing 1-3% bovine serum albumin.

Storage/Stability

Prior to reconstitution, store at –20°C. After reconstitution, the stock antibody solution may be stored at 4°C for up to 2 weeks. 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 1:300-1:1000 (1.0-3.0 µg/ml) for immunoblotting using HRP-goat anti-rabbit and 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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