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ProductInformation

Anti-Calcium Channel (γ2 Subunit)
(Anti-Calcium Channel Caγ2; Anti-Stargazin)
produced in rabbit, affinity isolated antibody

Catalog Number **C 8206**

Product Description

Anti-Calcium Channel (γ2 Subunit) is developed in rabbit using a highly purified peptide (C)RATDYLQASAITRIPS corresponding to amino acid residues 213-228 of mouse Caγ2,[1,2] with additional N-terminal cysteine, as an immunogen. This epitope is identical in human and rat. The antibody was affinity isolated on immobilized immunogen.

Anti-Calcium Channel (γ2 Subunit) recognizes Caγ2 in rat brain membranes by immunoblotting.

Voltage-gated calcium channels (VGCCs) are present in most excitable cells. There are five high-voltage activated calcium channel types (L, N, P, Q, and R) and one low-voltage activated channel type (T). Each of these channels exists as a heteromultimer of α1, β, α2/δand γsubunits with the voltage-activated calcium channel function carried by the α subunits.[3] VGCCs exert spatial and temporal control over cellular calcium concentrations and serve to modulate neurotransmitter release, hormone secretion, muscle contraction, electrical activity, cell metabolism and proliferation, gene expression, and neuronal survival.[4,5] Recent evidence suggests that the α1 subunit function may be modulated via interactions with other cellular proteins.[4,6] Cellular fine control of VGCCs even allows selection of different subtypes of VGCCs depending upon cellular conditions. For example, in neurotransmitter release from autonomic neurons, different VGCC subtypes are coupled to transmitter release at low versus high electrical stimulation frequencies, and potassium depolarization versus chemical stimulation.[7]

With the ubiquitous expression and functional importance of VGCCs, it is not surprising that alterations in channel function have been implicated in many diseases. This includes cardiovascular disease, migraines, ataxia, and epilepsy.[8,9] Mutations in three calcium channel genes have been found in epileptic mice.[10] Calcium dependent processes are important in synaptic modification and thus alterations in calcium channel function may be involved in synaptic plasticity and also in age-related neurodegenerative diseases.[11]

Calcium channel antagonists are used as antiarrhythmics[12] and in the treatment of hypertension[13] and may even be neuroprotective in Parkinson's Disease.[14] Recent advances have allowed researchers to learn much about the structure and function of these VGCCs. However, much remains to be determined about their precise cellular localization, *in vivo* physiological roles, roles in disease states and possible routes to modulate their structure/function to ameliorate effects of disease.

Reagents

The antibody is supplied lyophilized 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 using a carrier protein such as BSA (1%).

Storage/Stability

Prior to reconstitution, store at –20 °C. After reconstitution, the stock antibody solution may be stored at 2-8 °C for up to 2 weeks. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or 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 1:200 for immunoblotting.

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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