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Product Information

Anti-Calcium Channel $Ca_V3.1$ (α_{1G})
produced in rabbit, affinity isolated antibody

Catalog Number **C2240**

Product Description

Anti-Calcium Channel $Ca_V3.1$ (α_{1G}) is produced in rabbit using as immunogen a highly purified peptide, MDEEEDGAG-AEESGQPRSFTQL, corresponding to amino acid residues 1-22 of rat $Ca_V3.1$ with an additional C-terminal cysteine. The epitope is highly conserved in human $Ca_V3.1$ (20/22 residues identical). The antibody is affinity purified on immobilized immunogen.

Anti-Calcium Channel $Ca_V3.1$ (α_{1G}) specifically recognizes the Calcium Channel $Ca_V3.1$ (α_{1G}) protein in rat brain membrane extracts 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 $\alpha 1$, β, $\alpha 2/\delta$ and γ subunits with the voltage-activated calcium channel function carried by the α subunits.[1] 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.[2,3] Recent evidence suggests that the $\alpha 1$ subunit function may be modulated via interactions with other cellular proteins.[2,4] 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.[5]

Calcium channel $Ca_V3.1$ (α_{1G}) is a low-voltage-activated T-type calcium channel. Such T-type channels are expressed throughout the body. In the heart, they may be involved in pacemaker current. In neurons, these channels may play a secondary pacemaker role.[6] With the ubiquitous expression, it is not surprising that alterations in channel function have been implicated in disease. Drugs that act to block T-type calcium channels are used as antihypertensives, antiepileptics, and blocking of T-type calcium channels may be involved in the action of some anesthetics and antipsychotics as well.[6]

Much remains to be determined about the precise cellular localization, *in vivo* physiological roles, roles in disease states and possible routes to modulate their structure/function to ameliorate effects of disease.

Reagent

Supplied lyophilized from phosphate buffered saline, pH 7.4, with 1% bovine serum albumin, and 0.05 % sodium azide as preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To one vial of lyophilized powder, add 0.05 mL or 0.2 mL of deionized water, depending on the package size purchased. Antibody dilutions should be made in buffer containing 1-3 % bovine serum albumin.

Storage/Stability

Lyophilized powder can be stored intact at room temperature for several weeks. For extended storage, it should be stored at –20 °C or below. Reconstituted product may be stored at 2-8 °C for up to one two weeks. For extended storage, freeze in working aliquots at –20 °C. 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. Centrifuge all antibody preparations before use (10000 x *g* 5 min). Working dilution samples should be discarded if not used within 12 hours.

Product Profile
Immunoblotting: a working antibody dilution of 1:200 is recommended using rat brain membranes.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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6. Perez-Reyes, E., *Physiol. Rev*., **83**, 117-161 (2003).

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