

Monoclonal Antibody to CACNA1G (2052-2172, Cytopl. Dom.) - Purified

Alternate names:	Cav3.1c, KIAA1123, NBR13, Voltage-gated calcium channel alpha-1-G subunit
Catalog No.:	AM03226PU-N
Quantity:	0.1 mg
Concentration:	1.0 mg/ml
Background:	<p>Ion channels are integral membrane proteins that help establish and control the small voltage gradient across the plasma membrane of living cells by allowing the flow of ions down their electrochemical gradient (1).</p> <p>There are a few main classifications of gated ion channels. There are voltage-gated ion channels, ligand-gated, other gating systems and finally those that are classified differently, having more exotic characteristics. The first are voltage-gated ion channels which open and close in response to membrane potential. These are then separated into sodium, calcium, potassium, proton, transient receptor, and cyclic nucleotide-gated channels; each of which is responsible for a unique role (2).</p> <p>Specifically, Calcium channel CaV3.1 (a1G) 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 (3). 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 (3). 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.</p>
Uniprot ID:	Q9WUT2
NCBI:	10090
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10P (for use in human samples), SM20P (for use in rat samples), AM03095PU-N
Clone:	S178A-9
Immunogen:	Fusion protein amino acids 2052-2172 (cytoplasmic, C-terminus) of mouse CACNA1G protein
Format:	State: Liquid purified IgG fraction Purification: Protein G chromatography Buffer System: PBS pH 7.4, 50% Glycerol, 0.09% Sodium azide

- Applications:** **Immunohistochemistry:** 0.1-1 µg/ml; free floating sections, fixed in formaldehyde (not frozen or paraffin embedded).
Western Blot: 1 µg/ml of this antibody was sufficient for detection of mGluR1/5 in 20 µg of rat brain membrane lysate and assayed by colorimetric immunoblot analysis using HRP conjugated secondary antibody.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
- Specificity:** This antibody detects CACNA1G, ~ >200 kDa, and does not cross-react with CACNA1H / Cav3.2.
Species: Human, Mouse and Rat.
Other species not tested.
- Storage:** Upon receipt, store undiluted (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: One year from despatch.
- General Readings:** 1. Hille B. (2001) Ion Channels of Excitable Membranes, 3rd Ed., Sinauer Associated Inc.: Sunderland, MA USA.
2. www.iochannels.org
3. Perez-Reyes E. Molecular physiology of low-voltage-activated t-type calcium channels. Physiol Rev. 2003 Jan;83(1):117-61. PubMed PMID: 12506128.
- Pictures:** Western blot analysis of Cav3.1 in rat brain membrane tissues, using a 1:1000 dilution of the antibody

