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Product datasheet for TA326469

CACNA1G Mouse Monoclonal Antibody [Clone ID: S178A-9]

Product data:

Product Type:	Primary Antibodies
Clone Name:	S178A-9
Applications:	WB
Reactivity:	Human, Mouse, Rat
Host:	Mouse
Isotype:	IgG1
Clonality:	Monoclonal
Immunogen:	Fusion protein amino acids 2052-2172 (cytoplasmic C-terminus) of mouse Cav3.1
Formulation:	PBS pH7.4, 50% glycerol, 0.09% sodium azide
Concentration:	1 mg/ml
Purification:	Protein G Purified
Gene Name:	calcium voltage-gated channel subunit alpha1 G
Database Link:	NP_061496 Entrez Gene 12291 Mouse Entrez Gene 29717 Rat Entrez Gene 8913 Human

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Background: Ion channels are integral membrane proteins that help establish and control the small voltage gradient acrossthe plasma membrane of living cells by allowing the flow of ions down their electrochemical gradient . Theyare present in the membranes that surround all biological cells because their main function is to regulatethe flow of ions across this membrane. Whereas some ion channels permit the passage of ions based on charge, others conduct based on a ionic species, such as sodium or potassium. Furthermore, in some ion channels, thepassage is governed by a gate which is controlled by chemical or electrical signals, temperature, ormechanical forces.There are a few main classifications of gated ion channels. There are voltage- gated ion channels, ligandgated,other gating systems and finally those that are classified differently, having more exoticcharacteristics. The first are voltage- gated ion channels which open and close in response to membranepotential. 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. Ligand-gated ion channels arealso known as ionotropic receptors, and they open in response to specific ligand molecules binding to theextracellular domain of the receptor protein. The other gated classifications include activation and inactivation bysecond messengers, inward-rectifier potassium channels, calcium-activated potassium channels, two-pore-domain potassium channels, light-gated channels, mechano-sensitive ion channels and cyclic nucleotide-gated channels. Finally, the other classifications are based on less normal characteristics such as two-pore channels, and transient receptor potential channels .Specifically, Calcium channel CaV3.1 (a1G) is a low-voltageactivated 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 . With the ubiquitous expression, it is not surprising that alterations in channel function have been implicated in disease. Drugs thatact to block T-type calcium channels are used as antihypertensives, antiepileptics, and blocking of T-typecalcium channels may be involved in the action of some anesthetics and antipsychotics as well . 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.

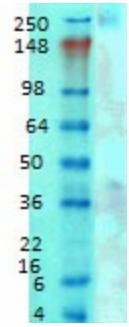
Synonyms: Ca(V)T.1; Cav3.1; NBR13

Note: Detects ~>200kDa. Does not cross-react with Cav3.2

Protein Families: Druggable Genome, Ion Channels: Calcium, Transmembrane

Protein Pathways: Calcium signaling pathway, MAPK signaling pathway, Type II diabetes mellitus

Product images:



Western blot analysis of Cav3.1 in rat brain membrane tissues, using a 1:1000 dilution of the antibody