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CACNA1S Rabbit pAb

Catalog # AP97947

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q13698
Other Accession	Q13698
Reactivity	Rat, Human, Mouse
Predicted	Pig, Rabbit
Host	Rabbit
Clonality	Polyclonal
Calculated MW	212350
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CACNA1S
Epitope Specificity	901-1000/1873
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the calcium channel alpha-1 subunit (TC 1.A.1.11) family. CACNA1S subfamily.
SUBUNIT	Multisubunit complex consisting of alpha-1, alpha-2, beta and delta subunits in a 1:1:1:1 ratio. The channel activity is directed by the pore-forming and voltage-sensitive alpha-1 subunit. In many cases, this subunit is sufficient to generate voltage-sensitive calcium channel activity. The auxiliary subunits beta and alpha-2/delta linked by a disulfide bridge regulate the channel activity. An additional gamma subunit is present only in skeletal muscle L-type channel. Interacts with DYSF and JSRP1. Interacts with RYR1 (By similarity). Subcellular Location : Membrane.
Post-translational modifications	Phosphorylation by PKA activates the calcium channel (By similarity).
DISEASE	Defects in CACNA1S are the cause of periodic paralysis hypokalemic type 1 (HOKPP1) [MIM:170400]; also designated HYPOPP. HOKPP1 is an autosomal dominant disorder manifested by episodic flaccid generalized muscle weakness associated with falls of serum potassium levels.Defects in CACNA1S are the cause of malignant hyperthermia susceptibility type 5 (MHS5) [MIM:601887]; an autosomal dominant disorder that is potentially lethal in susceptible individuals on exposure to commonly used inhalational anesthetics and depolarizing muscle relaxants.Defects in CACNA1S are the cause of susceptibility to thyrotoxic periodic paralysis type 1 (TTPP1) [MIM:188580]. A sporadic muscular disorder characterized by episodic weakness and hypokalemia during a thyrotoxic state. It is clinically similar to hereditary hypokalemic periodic paralysis, except for the fact that hyperthyroidism is an absolute requirement for disease manifestation. The disease presents with recurrent episodes of acute muscular weakness of the four extremities that vary in severity from paresis to complete paralysis. Attacks are triggered by ingestion of a high carbohydrate load or strenuous physical activity followed by a period of rest. Thyrotoxic periodic paralysis can occur in association with any cause of hyperthyroidism, but is most commonly associated with Graves disease.

Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Voltage-sensitive calcium channels (VSCC) mediate the entry of calcium ions into excitable cells and are also involved in a variety of calcium-dependent processes, including muscle contraction, hormone or neurotransmitter release, gene expression, cell motility, cell division and cell death. The isoform alpha-1S gives rise to L-type calcium currents. Long-lasting (L-type) calcium channels belong to the 'high-voltage activated' (HVA) group. They are blocked by dihydropyridines (DHP), phenylalkylamines, benzothiazepines, and by omega-agatoxin-IIIA (omega-Aga-IIIA). They are however insensitive to omega-conotoxin-GVIA (omega-CTx-GVIA) and omega-agatoxin-IVA (omega-Aga-IVA). Calcium channels containing the alpha-1S subunit play an important role in excitation-contraction coupling in skeletal muscle.

Additional Information

Gene ID	779
Other Names	CACNL1A3; CCHL1A3; CMYO18; CMYP18; Cav1.1; DHPRM; HOKPP; HOKPP1; MHS5; TTPP1; hypoPP; DHPR; DHPR alpha1s; fmd; mdg; sj; RGD1565743; CAC1S_HUMAN; CACNA1S; Calcium channel, L type, alpha-1 polypeptide, isoform 3, skeletal muscle; Voltage-gated calcium channel subunit alpha Cav1.1; CACH1; CACN1; CAC1S_MOUSE; Dihydropyridine receptor (DHPR); Cach1b; CAC1S_RABIT; Dihydropyridine receptor alpha-1S subunit (DHPR); CAC1S_RAT; ROB1; calcium voltage-gated channel subunit alpha1 S; calcium channel, voltage-dependent, L type, alpha 1S subunit
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	CACNA1S
Function	Pore-forming, alpha-1S subunit of the voltage-gated calcium channel that gives rise to L-type calcium currents in skeletal muscle. Calcium channels containing the alpha-1S subunit play an important role in excitation-contraction coupling in skeletal muscle via their interaction with RYR1, which triggers Ca(2+) release from the sarcoplasmic reticulum and ultimately results in muscle contraction. Long-lasting (L-type) calcium channels belong to the 'high-voltage activated' (HVA) group.
Cellular Location	Cell membrane, sarcolemma, T-tubule; Multi-pass membrane protein {ECO:0000250|UniProtKB:P07293}
Tissue Location	Skeletal muscle specific.

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