

Product datasheet

Recombinant Human CACNA1S protein ab114520

1 Image

Description

Product name	Recombinant Human CACNA1S protein	
Expression system	Wheat germ	
Accession	Q13698	
Protein length	Protein fragment	
Animal free	No	
Nature	Recombinant	
Species	Human	
Sequence	CPRVESSMPEDRKSSTPGSLHEETPHSRSTRENTSR CSAPATALLIQKAL VRGGLGTLAADANFIMATGQALGDACQMEPEEVEIMA TELLKGREA	
Predicted molecular weight	36 kDa including tags	
Amino acids	1743 to 1838	

Specifications

Our [Abpromise guarantee](#) covers the use of **ab114520** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	SDS-PAGE ELISA Western blot
Form	Liquid
Additional notes	This protein is best used within three months from the date of receipt.

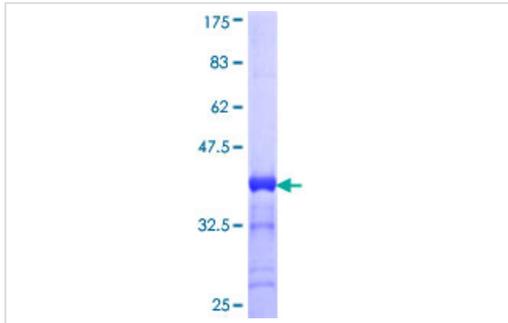
Preparation and Storage

Stability and Storage	Shipped on dry ice. Upon delivery aliquot and store at -80°C. Avoid freeze / thaw cycles. pH: 8.00 Constituents: 0.79% Tris HCl, 0.3% Glutathione
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General Info

Function	<p>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.</p>
Tissue specificity	<p>Skeletal muscle specific.</p>
Involvement in disease	<p>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.</p> <p>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.</p> <p>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.</p>
Sequence similarities	<p>Belongs to the calcium channel alpha-1 subunit (TC 1.A.1.11) family. CACNA1S subfamily.</p>
Domain	<p>Each of the four internal repeats contains five hydrophobic transmembrane segments (S1, S2, S3, S5, S6) and one positively charged transmembrane segment (S4). S4 segments probably represent the voltage-sensor and are characterized by a series of positively charged amino acids at every third position.</p> <p>The loop between repeats II and III interacts with the ryanodine receptor, and is therefore important for calcium release from the endoplasmic reticulum necessary for muscle contraction.</p>
Post-translational modifications	<p>Phosphorylation by PKA activates the calcium channel.</p>
Cellular localization	<p>Membrane.</p>

Images



12.5% SDS-PAGE analysis of CACNA1S protein (ab114520).
Stained with Coomassie Blue.

SDS-PAGE - Recombinant Human CACNA1S
protein (ab114520)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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