abcam

Product datasheet

Anti-CACNA1S antibody [1A] ab2862

★★★★★ 2 Abreviews 21 References 2 图像

概述

产品名称	Anti-CACNA1S抗体[1A]
描述	**小鼠单克隆抗体**[1A] to CACNA1S
宿主	Mouse
经测试应用	**适用于:** WB, ELISA, Inhibition Assay, ICC/IF, Flow Cyt, Flow Cyt (Intra), IP, IHC-P, IHC-Fr
种属反应性	**与反应:** Mouse, Rat, Rabbit, Guinea pig, Human
免疫原	Full length native protein (purified). This information is proprietary to Abcam and/or its suppliers.
阳性对照	Human skeletal muscle tissue
常规说明	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

性能

形式	Liquid
存放说明	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
存储溶液	pH: 7.4 Preservative: 0.05% Sodium azide
纯度	Protein A purified
Primary antibody说明	Voltage-sensitive calcium channels mediate the entry of calcium into many types of excitable cells and thus play a key role in neurotransmitter release and excitation-contraction (E-C) coupling. The 1,4-dihydropyridines (DHPs) are synthetic organic compounds which can be used to identify the L-type calcium channels that are found in all types of vertebrate muscle, neuronal and neuroendocrine cells. The DHP receptor is part of the L-type calcium channel complex and is thought to be the voltage sensor in E-C coupling. The purified DHP receptor isolated from triads is composed of at least four subunits. The alpha-1 subunit contains the binding site for the DHPs and shows high sequence homology to the voltage gated sodium channel. The alpha-2 subunit is

a large glycoprotein associated with the DHP receptor which was first described in skeletal muscle and is also found in high concentrations in other excitable tissues such as cardiac muscle and brain and in low concentrations in most other tissues studied. The other two subunits that co-purify with the DHP receptor are termed beta and gamma.

克隆	单克隆
克隆编号	1A
同种型	IgG1

应用

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"应用说明"部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
WB	★★★★★ (1)	Use at an assay dependent concentration.
ELISA		Use at an assay dependent concentration.
Inhibition Assay		Use at an assay dependent concentration.
ICC/IF	★★★★★ (1)	Use at an assay dependent concentration. PubMed: 21693436
Flow Cyt		Use a concentration of 1 µg/ml.
Flow Cyt (Intra)		Use at an assay dependent concentration. **ab170190** - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.
IP		Use at an assay dependent concentration.
IHC-P		1/20.
IHC-Fr		Use at an assay dependent concentration. PubMed: 21474431

靶标

功能	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.
组织特异性	Skeletal muscle specific.
疾病相关	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.

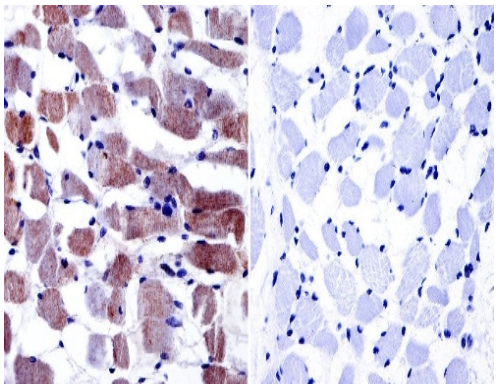
序列相似性 Belongs to the calcium channel alpha-1 subunit (TC 1.A.1.11) family. CACNA1S subfamily.

结构域 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.
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.

翻译后修饰 Phosphorylation by PKA activates the calcium channel.

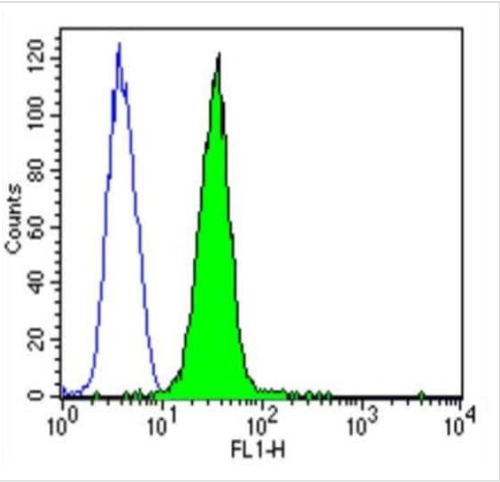
细胞定位 Membrane.

图片



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CACNA1S antibody [1A] (ab2862)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) was performed on normal biopsies of deparaffinized human skeletal muscle tissue. Heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer, microwaved for 8-15 minutes. Tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then incubated with ab2862 (1:20) or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP, followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



Flow Cytometry - Anti-CACNA1S antibody [1A] (ab2862)

Flow cytometry analysis of Dihydropyridine Receptor alpha-1 in U251 cells (green) compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of 1-5 x10^6 cells/mL, fixed with 2% paraformaldehyde and washed with PBS. Cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with a Dihydropyridine Receptor alpha-1 monoclonal antibody at 1 µg/test for 40 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated secondary antibody and re-suspended in PBS for FACS analysis.

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