abcam

Product datasheet

Anti-CACNA1C antibody [S57] ab84814

Recombinant

★★★★★ 6 Abreviews 23 References 5 Images

Overview

Product name	Anti-CACNA1C antibody [S57]
Description	Mouse monoclonal [S57] to CACNA1C
Host species	Mouse
Tested applications	**Suitable for:** ICC/IF, IHC-P, WB, Flow Cyt
Species reactivity	**Reacts with:** Mouse, Human, Recombinant fragment
Immunogen	Fusion protein corresponding to Rabbit CACNA1C aa 1500-1750 (C terminal). Database link: **P15381**
Positive control	WB: Cell lysates prepared from DHPR alpha 1 transfected CHO cells. IHC-P: Human hippocampus tissue; Mouse brain tissue. ICC/IF: SK-N-BE cells. Flow Cyt: SH-SY5Y cells.
General notes	The clone number has been updated from S57-46 to L57/46, both clone numbers name the same antibody clone. 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

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid repeated freeze / thaw cycles.
Storage buffer	Preservative: 0.1% Sodium azide Constituents: 50% Glycerol, PBS
Purity	Protein G purified
Clonality	Monoclonal
Clone number	S57
Isotype	IgG1

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab84814 in the following tested applications.

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

Application	Abreviews	Notes
ICC/IF		1/100.
IHC-P		Use a concentration of 0.1 - 10 µg/ml. Use at 0.1-1.0µg/mL (perox), 1.0-10µg/mL (IF).
WB		Use a concentration of 1 µg/ml. Detects a band of approximately 240 kDa. If results are poor, use lysate without boiling, heat at 37°C for 15 minutes.
Flow Cyt		Use 1µg for 10^6 cells. **ab170192** - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Target

Function 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-1C 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-1C subunit play an important role in excitation-contraction coupling in the heart. The various isoforms display marked differences in the sensitivity to DHP compounds. Binding of calmodulin or CABP1 at the same regulatory sites results in an opposit effects on the channel function.

Tissue specificity Expressed in brain, heart, jejunum, ovary, pancreatic beta-cells and vascular smooth muscle. Overall expression is reduced in atherosclerotic vascular smooth muscle.

Involvement in disease Timothy syndrome
Brugada syndrome 3

Sequence similarities Belongs to the calcium channel alpha-1 subunit (TC 1.A.1.11) family. CACNA1C subfamily.

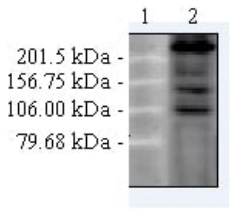
Domain Each of the four internal repeats contains five hydrophobic transmembrane segments (S1, S2, S3, S5, S6) and one positively charged transmembrane segment (S4). S4 segments probably represent the voltage-sensor and are characterized by a series of positively charged amino acids at every third position.
Binding of intracellular calcium through the EF-hand motif inhibits the opening of the channel.

Post-translational modifications Phosphorylation by PKA activates the channel.

Cellular localization Membrane. Cell membrane. The interaction between RRAD and CACNB2 regulates its trafficking

to the cell membrane.

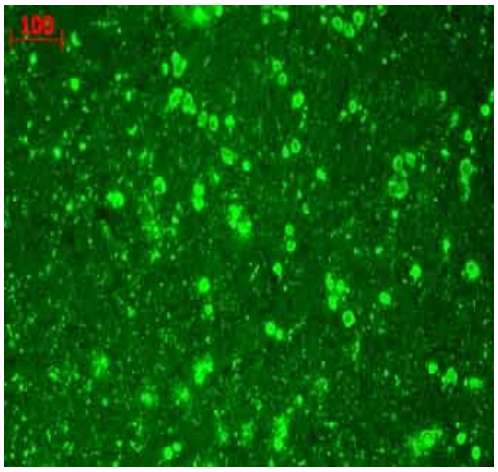
Images



Western blot - Anti-CACNA1C antibody [S57] (ab84814)

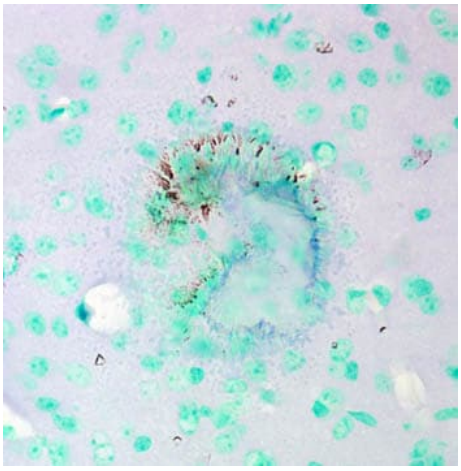
All lanes : Anti-CACNA1C antibody [S57] (ab84814) at 1 µg/ml

Lane 1 : Molecular weight marker
Lane 2 : Cell lysates prepared from DHPR alpha 1 transfected CHO cells



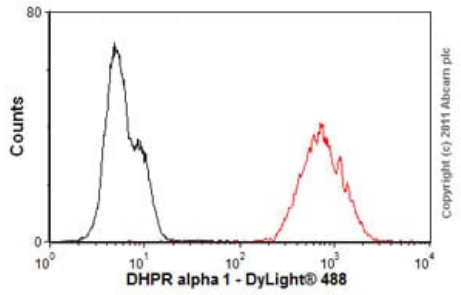
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CACNA1C antibody [S57] (ab84814)

ab84814 staining CACNA1C in human hippocampus tissue section by Immunohistochemistry (Bouin's fixative fixed paraffin embedded tissue sections). Tissue underwent heat mediate fixation in microwave and in citrate buffer. The primary antibody was used at 1/100 dilution. A Fluorophore conjugated goat anti-mouse was used as secondary at 1/50 dilution.



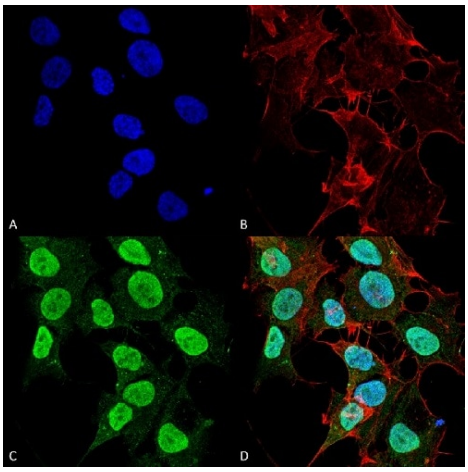
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CACNA1C antibody [S57] (ab84814)

ab84814 staining CACNA1C in mouse brain tissue section by immunohistochemistry (Bouin's fixed paraffin embedded tissue section. Tissue underwent heat mediated fixation in microwave and in citrate buffer. The primary antibody was used at 1/100 dilution. A HRP conjugated secondary was used at 10 dilution.



Flow Cytometry - Anti-CACNA1C antibody [S57] (ab84814)

Overlay histogram showing SH-SY5Y cells stained with ab84814 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab84814, 1µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (**ab96879**) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (**ab91366**, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive result in SH-SY5Y cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween for 20 min used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-CACNA1C antibody [S57] (ab84814)

Formaldehyde-fixed SK-N-BE cells stained for CACNA1C (green) using ab84814 at 1/100 dilution in ICC/IF.

Secondary Antibody: Goat Anti-Mouse ATTO 488 at 1/200 dilution for 60 minutes at room temperature. Counterstain: Phalloidin Texas Red F-Actin stain (A); DAPI (B, blue) nuclear stain at 1/1000, 1/5000 for 60 minutes at room temperature, 5 minutes at room temperature.

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