SANTA CRUZ BIOTECHNOLOGY, INC.

KCNMB4 (E-5): sc-515713

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

MaxiK channels are large conductance voltage and Ca^{2+}-activated potassium channels which are formed by tetramers of MaxiKα subunits, which create pores that are used for smooth muscle tone and neuronal excitability. These MaxiKα subunits have the ability to coassemble with MaxiKβ subunits that are structurally related and are able to regulate the function of MaxiKα subunits. KCNMB4 (potassium large conductance calcium-activated channel, subfamily M, β member 4), also known as Slo-β-4 or Maxi K channel subunit β-4, is a 210 amino acid multi-pass membrane protein belonging to the KCNMB family. Predominantly expressed in brain, KCNMB4 is a regulatory subunit of the calcium activated potassium MaxiKα channel. KCNMB4 contributes to MaxiKα channel diversity by modulating calcium sensitivity and gating kinetics of MaxiKα.

REFERENCES

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2. Behrens, R., et al. 2000. hKCNMB3 and hKCNMB4, cloning and characterization of two members of the large-conductance calcium-activated potassium channel β subunit family. FEBS Lett. 474: 99-106.
3. Brenner, R., et al. 2000. Cloning and functional characterization of novel large conductance calcium-activated potassium channel β subunits, hKCNMB3 and hKCNMB4. J. Biol. Chem. 275: 6453-6461.
4. Meera, P., et al. 2000. A neuronal β subunit (KCNMB4) makes the large conductance, voltage- and Ca^{2+}-activated K^+ channel resistant to charybdotoxin and iberiotoxin. Proc. Natl. Acad. Sci. USA 97: 5562-5567.
5. Jin, P., et al. 2002. Phosphorylation-dependent functional coupling of hSlo calcium-dependent potassium channel and its hβ 4 subunit. J. Biol. Chem. 277: 10014-10020.
6. Jin, P., et al. 2002. Reciprocal modulation between the α and β 4 subunits of hSlo calcium-dependent potassium channels. J. Biol. Chem. 277: 43724-43729.
7. Orio, P., et al. 2002. New disguises for an old channel: MaxiK channel β-subunits. News Physiol. Sci. 17: 156-161.

CHROMOSOMAL LOCATION

Genetic locus: KCNMB4 (human) mapping to 12q15.

SOURCE

KCNMB4 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 152-168 within an extracellular domain of KCNMB4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

KCNMB4 (E-5) is recommended for detection of KCNMB4 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KCNMB4 siRNA (h): sc-96190, KCNMB4 shRNA Plasmid (h): sc-96190-SH and KCNMB4 shRNA (h) Lentiviral Particles: sc-96190-V.

Molecular Weight of KCNMB4: 24 kDa.

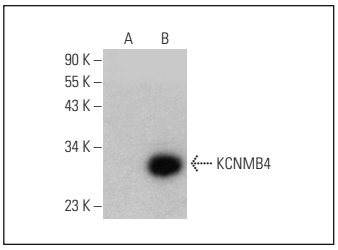
Molecular Weight of glycosylated KCNMB4: 32 kDa.

Positive Controls: KCNMB4 (h): 293T Lysate: sc-115563.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



KCNMB4 (E-5): sc-515713. Western blot analysis of KCNMB4 expression in non-transfected: sc-117752 (**A**) and human KCNMB4 transfected: sc-115563 (**B**) whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.