SANTA CRUZ BIOTECHNOLOGY, INC.

MaxiKβ (FL-191): sc-33608

BACKGROUND

The KCNMB1 gene, located on chromosome 5q35.1, contains 4 exons and encodes the 191 amino-acid protein MaxiKβ subunit 1 (also designated calcium-activated potassium channel β subunit, BK channel β subunit, Slo-β and KVCAβ). MaxiKβ subunit 1 consists of two putative transmembrane domains, an extracellular loop containing three consensus sequences for N-linked glycosylation and four cysteine residues that might form disulfide bridges. One of four subunits in the MaxiKβ family, MaxiKβ subunit 1 is expressed predominately in smooth muscle tissue but is also found in brain, liver and lymphatic tissues. MaxiKβ subunit 1 associates with MaxiKα to form a calcium-activated potassium channel (also designated MaxiK and BK channel) and increases the sensitivity of the MaxiKα to calcium and voltage. The α/β1 channel is the most sensitive of all Maxi channels to calcium. MaxiKβ plays an important role in vasoregulation by controlling the sensitivity of MaxiK channels to calcium, which leads to the proper amount of arterial relaxation.

REFERENCES

1. Knaus, H.G., et al. 1994. Primary sequence and immunological characterization of β-subunit of high conductance Ca^{2+}-activated K^{+} channel from smooth muscle. J. Biol. Chem. 269: 17274-17278.
2. Tseng-Crank, J., et al. 1996. Cloning, expression, and distribution of a Ca^{2+}-activated K^{+} channel β-subunit from human brain. Proc. Natl. Acad. Sci. USA 93: 9200-9205.
3. Tanaka, Y., et al. 1997. Molecular constituents of Maxi K Ca channels in human coronary smooth muscle: predominant α + β subunit complexes. J. Physiol. 502: 545-557.
4. Jiang, Z., et al. 1999. Human and rodent MaxiK channel β-subunit genes: cloning and characterization. Genomics 55: 57-67.

CHROMOSOMAL LOCATION

Genetic locus: KCNMB1 (human) mapping to 5q35.1; Kcnmb1 (mouse) mapping to 11 A4.

SOURCE

MaxiKβ (FL-191) is a rabbit polyclonal antibody raised against amino acids 1-191 representing full length MaxiKβ of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

MaxiKβ (FL-191) is recommended for detection of MaxiKβ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

MaxiKβ (FL-191) is also recommended for detection of MaxiKβ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MaxiKβ siRNA (h): sc-42513, MaxiKβ siRNA (m): sc-42514, MaxiKβ shRNA Plasmid (h): sc-42513-SH, MaxiKβ shRNA Plasmid (m): sc-42514-SH, MaxiKβ shRNA (h) Lentiviral Particles: sc-42513-V and MaxiKβ shRNA (m) Lentiviral Particles: sc-42514-V.

Molecular Weight of MaxiKβ isoforms 1/2: 22/15 kDa.

Molecular Weight of glycosylated MaxiKβ: 26-37 kDa.

Positive Control: HISM cell lysate: sc-2229.

SELECT PRODUCT CITATIONS

1. Long, X., et al. 2009. The smooth muscle cell-restricted KCNMB1 ion channel subunit is a direct transcriptional target of serum response factor and myocardin. J. Biol. Chem. 284: 33671-33682.
2. Rodríguez-Flores, J.L., et al. 2010. Conserved regulatory motifs at phenylethanolamine N-methyltransferase (PNMT) are disrupted by common functional genetic variation: an integrated computational/experimental approach. Mamm. Genome 21: 195-204.
3. Kerbiriou-Nabias, D., et al. 2011. Phosphatidylserine exposure and calcium-activated potassium efflux in platelets. Br. J. Haematol. 155: 268-270.
4. Xu, C., et al. 2011. CRH acts on CRH-R1 and -R2 to differentially modulate the expression of large-conductance calcium-activated potassium channels in human pregnant myometrium. Endocrinology 152: 4406-4417.
5. Aydin, M., et al. 2012. Large-conductance calcium-activated potassium channel activity, as determined by whole-cell patch clamp recording, is decreased in urinary bladder smooth muscle cells from male rats with partial urethral obstruction. BJU Int. 110: E402-E408.

RESEARCH USE

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