

MaxiK α (E-16): sc-14746

BACKGROUND

The KCNMA1 gene, located on chromosome 10q22.3, encodes MaxiK α (also designated calcium-activated potassium channel, large conductance calcium- and voltage-dependent potassium channel α subunit, Slo α subunit and BKCA α subunit). MaxiK α carboxyl terminal is spliced to form nine transcripts. MaxiK α is expressed in neurons and smooth muscle tissue. MaxiK α associates with MaxiK β to form Ca²⁺-activated K⁺ channels (also designated Maxi-K or BK channels). MaxiK α forms the potassium-permeable pore in these channels, which respond primarily to increases in intracellular calcium ion concentrations. Maxi-K channels are also known to interact with hormones, such as estradiol. MaxiK β can regulate the sensitivity of MaxiK α to calcium. Maxi-K channels may be involved in cell shrinkage and caspase activation, which leads to pulmonary vascular smooth muscle cell apoptosis.

REFERENCES

1. Tseng-Crank, J., et al. 1994. Cloning, expression, and distribution of functionally distinct Ca²⁺-activated K⁺ channel isoforms from human brain. *Neuron* 13: 1315-1330.
2. Pallanck, L., et al. 1994. Cloning and characterization of human and mouse homologs of the *Drosophila* calcium-activated potassium channel gene, slowpoke. *Hum. Mol. Genet.* 3: 1239-1243.
3. Dhulipala, P.D., et al. 1999. Cloning and characterization of the promoters of the maxiK channel α and β subunits. *Biochim. Biophys. Acta* 1444: 254-262.
4. Ramanathan, K., et al. 1999. A molecular mechanism for electrical tuning of cochlear hair cells. *Science* 283: 215-217.
5. Valverde, M.A., et al. 1999. Acute activation of MaxiK channels (hSlo) by estradiol binding to the β subunit. *Science* 285: 1929-1931.
6. Lippiat, J.D., et al. 2000. A residue in the intracellular vestibule of the pore is critical for gating and permeation in Ca²⁺-activated K⁺ (BKCa) channels. *J. Physiol.* 529: 131-138.
7. Krick, S., et al. 2001. Activation of K⁺ channels induces apoptosis in vascular smooth muscle cells. *Am. J. Physiol., Cell Physiol.* 280: C970-C979.

CHROMOSOMAL LOCATION

Genetic locus: KCNMA1 (human) mapping to 10q22.3; Kcnma1 (mouse) mapping to 14 A3.

SOURCE

MaxiK α (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MaxiK α of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-14746 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MaxiK α (E-16) is recommended for detection of MaxiK α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

MaxiK α (E-16) is also recommended for detection of MaxiK α in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for MaxiK α siRNA (h): sc-42511, MaxiK α siRNA (m): sc-42512, MaxiK α shRNA Plasmid (h): sc-42511-SH, MaxiK α shRNA Plasmid (m): sc-42512-SH, MaxiK α shRNA (h) Lentiviral Particles: sc-42511-V and MaxiK α shRNA (m) Lentiviral Particles: sc-42512-V.

Molecular Weight of MaxiK α native α subunit: 125 kDa.

Molecular Weight of MaxiK α purified α subunit: 65 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Pluznick, J.L., et al. 2005. BK- β 1 subunit: immunolocalization in the mammalian connecting tubule and its role in the kaliuretic response to volume expansion. *Am. J. Physiol. Renal Physiol.* 288: F846-F854.

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 or our catalog for detailed protocols and support products.



Try **MaxiK α (B-1): sc-374142**, our highly recommended monoclonal alternative to MaxiK α (E-16).