

# MaxiK $\beta$ (Y-17): sc-14751

## BACKGROUND

The KCNMB1 gene, located on chromosome 5q35.1, contains four exons and encodes the 191 amino-acid protein MaxiK $\beta$  subunit 1 (also designated calcium-activated potassium channel  $\beta$  subunit, BK channel  $\beta$  subunit, Slo- $\beta$  and KVCA $\beta$ ). MaxiK $\beta$  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 MaxiK $\beta$  family, MaxiK $\beta$  subunit 1 is expressed predominantly in smooth muscle tissue but is also found in brain, liver and lymphatic tissues. MaxiK $\beta$  subunit 1 associates with MaxiK $\alpha$  to form a calcium-activated potassium channel (also designated MaxiK and BK channel) and increases the sensitivity of the MaxiK $\alpha$  to calcium and voltage. The  $\alpha/\beta$ 1 channel is the most sensitive of all Maxi channels to calcium. MaxiK $\beta$  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  $\beta$ -subunit of high conductance Ca<sup>2+</sup>-activated K<sup>+</sup> channel from smooth muscle. *J. Biol. Chem.* 269: 17274-17278.
2. Tseng-Crank, J., et al. 1996. Cloning, expression, and distribution of a Ca<sup>2+</sup>-activated K<sup>+</sup> channel  $\beta$ -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  $\alpha + \beta$  subunit complexes. *J. Physiol.* 502: 545-557.
4. Jiang, Z., et al. 1999. Human and rodent MaxiK channel  $\beta$ -subunit genes: cloning and characterization. *Genomics* 55: 57-67.
5. Wallner, M, et al. 1999. Molecular basis of fast inactivation in voltage and Ca<sup>2+</sup>-activated K<sup>+</sup> channels: a transmembrane  $\beta$ -subunit homolog. *Proc. Natl. Acad. Sci. USA* 96: 4137-4142.

## CHROMOSOMAL LOCATION

Genetic locus: KCNMB1 (human) mapping to 5q35.1.

## SOURCE

MaxiK $\beta$  (Y-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MaxiK $\beta$  of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-14751 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

MaxiK $\beta$  (Y-17) is recommended for detection of MaxiK $\beta$  of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

MaxiK $\beta$  (Y-17) is also recommended for detection of MaxiK $\beta$  in additional species, including equine and porcine.

Suitable for use as control antibody for MaxiK $\beta$  siRNA (h): sc-42513, MaxiK $\beta$  shRNA Plasmid (h): sc-42513-SH and MaxiK $\beta$  shRNA (h) Lentiviral Particles: sc-42513-V.

Molecular Weight of MaxiK $\beta$  isoforms 1/2: 22/15 kDa.

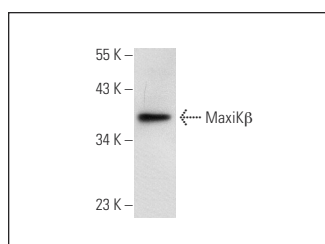
Molecular Weight of glycosylated MaxiK $\beta$ : 26-37 kDa.

Positive Control: HISM cell lysate: sc-2229.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



MaxiK $\beta$  (Y-17): sc-14751. Western blot analysis of MaxiK $\beta$  expression in HISM whole cell lysate.

## RESEARCH USE

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

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Try **MaxiK $\beta$  (A-5): sc-377023**, our highly recommended monoclonal alternative to MaxiK $\beta$  (Y-17).