

## ROM-K (E-20): sc-10694

### BACKGROUND

ROM-K, an ATP-sensitive inward rectifying K<sup>+</sup> channel (also designated KIR1.1), is a member of the Kir family of K<sup>+</sup> channels that controls renal K<sup>+</sup> secretion. These K<sup>+</sup> channels more readily conduct an inward current rather than an outward current and are constitutively open. Inwardly rectifying K<sup>+</sup> channels are a complex of four Kir (Kir1-6) subunits. ROM-K is activated by protein kinase A, and its activity is regulated by phosphatidylinositol 4,5-bisphosphate and intracellular pH. Alternative splicing of ROM-K mRNA yields various isoforms which are differentially expressed in nephrons of the mammalian kidney. Mutations in the ROM-K gene are linked to antenatal Bartter syndrome, an autosomal recessive disorder of renal electrolyte transport.

### REFERENCES

- Boim, M.A., et al. 1995. ROM-K inwardly rectifying ATP-sensitive K<sup>+</sup> channel. II. Cloning and distribution of alternative forms. *Am. J. Physiol.* 268: F1132-F1140.
- Hebert, S.C. 1995. An ATP-regulated, inwardly rectifying potassium channel from rat kidney (ROM-K). *Kidney Int.* 48: 1010-1016.
- Kondo, C., et al. 1996. Cloning and functional expression of a novel isoform of ROM-K inwardly rectifying ATP-dependent K<sup>+</sup> channel, ROM-K6 (Kir1.1f). *FEBS Lett.* 399: 122-126.
- Zolotnitskaya, A., et al. 1999. Developmental expression of ROM-K in rat kidney. *Am. J. Physiol.* 276: F825-836.
- Liou, H.H., et al. 1999. Regulation of ROM-K1 channel by protein kinase A via a phosphatidylinositol 4,5-bisphosphate-dependent mechanism. *Proc. Natl. Acad. Sci. USA* 96: 5820-5825.
- Zolotnitskaya A., et al. 1999. Developmental expression of ROM-K in rat kidney. *Am. J. Physiol.* 276: F825-836.
- Flagg, T.P., et al. 1999. A mutation linked with Bartter's syndrome locks Kir1.1a (ROM-K1) channels in a closed state. *J. Gen. Physiol.* 114: 685-700.

### CHROMOSOMAL LOCATION

Genetic locus: KCNJ1 (human) mapping to 11q24.3; Kcnj1 (mouse) mapping to 9 A4.

### SOURCE

ROM-K (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ROM-K 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.

Blocking peptide available for competition studies, sc-10694 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### RESEARCH USE

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

### APPLICATIONS

ROM-K (E-20) is recommended for detection of ROM-K isoforms 1, 2 and 3 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).

ROM-K (E-20) is also recommended for detection of ROM-K isoforms 1, 2 and 3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ROM-K siRNA (h): sc-42632, ROM-K siRNA (m): sc-42633, ROM-K shRNA Plasmid (h): sc-42632-SH, ROM-K shRNA Plasmid (m): sc-42633-SH, ROM-K shRNA (h) Lentiviral Particles: sc-42632-V and ROM-K shRNA (m) Lentiviral Particles: sc-42633-V.

Molecular Weight of ROM-K: 42 kDa.

Molecular Weight of ROM-K dimer: 80 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

- Velic, A., et al. 2005. Acute rejection after rat renal transplantation leads to downregulation of NA<sup>+</sup> and water channels in the collecting duct. *Am. J. Transplant.* 5: 1276-1285.
- Yang, D., et al. 2008. Expression of inwardly rectifying potassium channel subunits in native human retinal pigment epithelium. *Exp. Eye Res.* 87: 176-183.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **ROM-K (D-3): sc-393189**, our highly recommended monoclonal alternative to ROM-K (E-20).