

ROM-K (D-3): sc-393189

BACKGROUND

ROM-K, an ATP-sensitive inward rectifying K⁺ channel (also designated KIR1.1), is a member of the Kir family of K⁺ channels that controls renal K⁺ secretion. These K⁺ channels more readily conduct an inward current rather than an outward current and are constitutively open. Inwardly rectifying K⁺ 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

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- Hebert, S.C. 1995. An ATP-regulated, inwardly rectifying potassium channel from rat kidney (ROMK). *Kidney Int.* 48: 1010-1016.
- Kondo, C., et al. 1996. Cloning and functional expression of a novel isoform of ROMK inwardly rectifying ATP-dependent K⁺ channel, ROMK6 (Kir1.1f). *FEBS Lett.* 399: 122-126.
- Zolotnitskaya, A., et al. 1999. Developmental expression of ROMK in rat kidney. *Am. J. Physiol.* 276: F825-F836.
- Liou, H.H., et al. 1999. Regulation of ROMK1 channel by protein kinase A via a phosphatidylinositol 4,5-bisphosphate-dependent mechanism. *Proc. Natl. Acad. Sci. USA* 96: 5820-5825.
- Flagg, T.P., et al. 1999. A mutation linked with Bartter's syndrome locks Kir 1.1a (ROMK1) 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 (D-3) is a mouse monoclonal antibody raised against amino acids 321-390 mapping at the C-terminus of ROM-K 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.

ROM-K (D-3) is available conjugated to agarose (sc-393189 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393189 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393189 PE), fluorescein (sc-393189 FITC), Alexa Fluor[®] 488 (sc-393189 AF488), Alexa Fluor[®] 546 (sc-393189 AF546), Alexa Fluor[®] 594 (sc-393189 AF594) or Alexa Fluor[®] 647 (sc-393189 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393189 AF680) or Alexa Fluor[®] 790 (sc-393189 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

ROM-K (D-3) is recommended for detection of ROM-K of mouse, rat and 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 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.

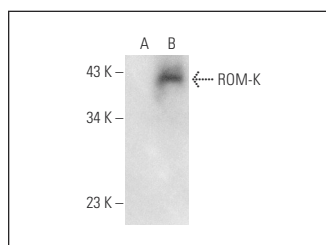
Molecular Weight of ROM-K dimer: 80 kDa.

Positive Controls: ROM-K (m): 293T Lysate: sc-123254 or SP2/0 whole cell lysate: sc-364795.

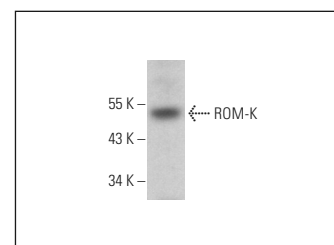
RECOMMENDED SUPPORT REAGENTS

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, UltraCruz[®] Blocking Reagent: sc-516214 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



ROM-K (D-3): sc-393189. Western blot analysis of ROM-K expression in non-transfected: sc-117752 (A) and mouse ROM-K transfected: sc-123254 (B) 293T whole cell lysates.



ROM-K (D-3): sc-393189. Western blot analysis of ROM-K expression in SP2/0 whole cell lysate.

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.