SANTA CRUZ BIOTECHNOLOGY, INC.

KPI-2 (H-9): sc-514237

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The Power to Question

BACKGROUND

KPI-2 (kinase/phosphatase/inhibitor 2), also known as BREK, LMR2, cprk, AATYK2 or LMTK2 (lemur tyrosine kinase 2), is a 1,503 amino acid single-pass membrane protein belonging to the protein kinase superfamily and the protein tyrosine kinase family. Mainly expressed in skeletal muscle, and weakly in brain and pancreas, KPI-2 contains N-terminal transmembrane helices and a long C-terminal cytoplasmic tail with serine/threonine/tyrosine kinase activity. KPI-2 may be involved in nerve growth factor (NGF)-TrkA signaling, endosomal membrane trafficking and spermatogenesis. KPI-2 localizes to cytoplasmic membrane vesicles and to perinuclear recycling endosomes. KPI-2 is critical for the transition of endocytosed membrane vesicles from early endosomes to recycling endosomes. The gene encoding KPI-2 is a potential therapeutic target for prostate cancer.

REFERENCES

1. Wang, H. and Brautigan, D.L. 2002. A novel transmembrane Ser/Thr kinase complexes with protein phosphatase-1 and inhibitor-2. J. Biol. Chem. 277: 49605-49612.
2. Kawa, S., et al. 2004. Involvement of BREK, a serine/threonine kinase enriched in brain, in NGF signalling. Genes Cells 9: 219-232.
3. Wang, H. and Brautigan, D.L. 2006. Peptide microarray analysis of substrate specificity of the transmembrane Ser/Thr kinase KPI-2 reveals reactivity with cystic fibrosis transmembrane conductance regulator and phosphorylase. Mol. Cell. Proteomics 5: 2124-2130.
4. Kawa, S., et al. 2006. Azoospermia in mice with targeted disruption of the Brek/Lmtk2 (brain-enriched kinase/lemur tyrosine kinase 2) gene. Proc. Natl. Acad. Sci. USA 103: 19344-19349.
5. Chibalina, M.V., et al. 2007. Myosin VI and its interacting protein LMTK2 regulate tubule formation and transport to the endocytic recycling compartment. J. Cell Sci. 120: 4278-4288.
6. Inoue, T., et al. 2008. BREK/LMTK2 is a Myosin VI-binding protein involved in endosomal membrane trafficking. Genes Cells 13: 483-495.
7. Eeles, R.A., et. al. 2008. Multiple newly identified loci associated with prostate cancer susceptibility. Nat. Genet. 40: 316-321.

CHROMOSOMAL LOCATION

Genetic locus: LMTK2 (human) mapping to 7q21.3; Lmtk2 (mouse) mapping to 5 G2.

SOURCE

KPI-2 (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 78-99 near the N-terminus of KPI-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514237 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

KPI-2 (H-9) is recommended for detection of KPI-2 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 KPI-2 siRNA (h): sc-75397, KPI-2 siRNA (m): sc-75398, KPI-2 shRNA Plasmid (h): sc-75397-SH, KPI-2 shRNA Plasmid (m): sc-75398-SH, KPI-2 shRNA (h) Lentiviral Particles: sc-75397-V and KPI-2 shRNA (m) Lentiviral Particles: sc-75398-V.

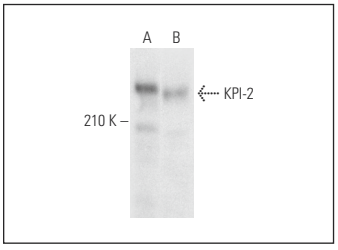
Molecular Weight of KPI-2: 250 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or ARPE-19 whole cell lysate: sc-364357.

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



KPI-2 (H-9): sc-514237. Western blot analysis of KPI-2 expression in HeLa (**A**) and ARPE-19 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Bencze, J., et al. 2019. Neuropathological characterization of lemur tyrosine kinase 2 (LMTK2) in Alzheimer's disease and neocortical Lewy body disease. Sci. Rep. 9: 17222.

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.