SANTA CRUZ BIOTECHNOLOGY, INC.

KNP-I (D-5): sc-514347

BACKGROUND

KNP-I (ES1 protein homolog, protein GT335) is a ubiquitously expressed mitochondrial protein that belongs to the ES1 family of proteins. It is a highly conserved protein with homologs identified in various species. This conserved nature suggests an important biological role for the KNP-I protein. The gene that encodes KNP-I (C21orf33) is located on human chromosome 21 in close proximity to a region (D21S25) associated with many genetic diseases. Down syndrome (DS), caused by an extra copy of chromosome 21, is the most common manifestation of trisomic chromosomes. It is likely that the overproduction of the C21orf33 gene product plays a role in the pathology of DS, while its chromosomal location suggests its likely involvement in D21S25 related diseases. While expressed in most tissue, highest expression of KNP-I is found in heart and muscle.

REFERENCES

1. Lafrenière, R.G., et al. 1996. Isolation and characterization of GT335, a novel human gene conserved in *Escherichia coli* and mapping to 21q22.3. Genomics 38: 264-272.
2. Nagamine, K., et al. 1996. Isolation of cDNA for a novel human protein KNP-I that is homologous to the *E. coli* SCRP-27A protein from the autoimmune polyglandular disease type I (APECED) region of chromosome 21q22.3. Biochem. Biophys. Res. Commun. 225: 608-616.
3. Scott, H.S., et al. 1997. Isolation of a human gene (HES1) with homology to an *Escherichia coli* and a zebrafish protein that maps to chromosome 21q22.3. Hum. Genet. 99: 616-623.
4. Scott, H.S., et al. 1998. Characteri-zation of a novel gene, C21orf2, on human chromosome 21q22.3 and its exclusion as the APECED gene by mutation analysis. Genomics 47: 64-70.

CHROMOSOMAL LOCATION

Genetic locus: C21orf33 (human) mapping to 21q22.3; D10Jhu81e (mouse) mapping to 10 C1.

SOURCE

KNP-I (D-5) is a mouse monoclonal antibody raised against amino acids 7-268 mapping at the C-terminus of KNP-1 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.

KNP-I (D-5) is available conjugated to agarose (sc-514347 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514347 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514347 PE), fluorescein (sc-514347 FITC), Alexa Fluor® 488 (sc-514347 AF488), Alexa Fluor® 546 (sc-514347 AF546), Alexa Fluor® 594 (sc-514347 AF594) or Alexa Fluor® 647 (sc-514347 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514347 AF680) or Alexa Fluor® 790 (sc-514347 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

KNP-I (D-5) is recommended for detection of KNP-I of human origin, D10Jhu81e of mouse origin and the corresponding rat homolog 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 KNP-I siRNA (h): sc-91466, D10Jhu81e siRNA (m): sc-142774, KNP-I shRNA Plasmid (h): sc-91466-SH, D10Jhu81e shRNA Plasmid (m): sc-142774-SH, KNP-I shRNA (h) Lentiviral Particles: sc-91466-V and D10Jhu81e shRNA (m) Lentiviral Particles: sc-142774-V.

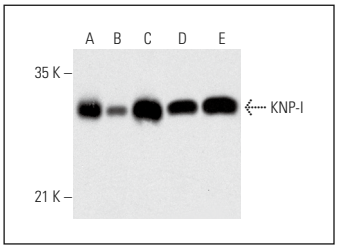
Molecular Weight of KNP-I: 28 kDa.

Positive Controls: human heart extract: sc-363763, A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

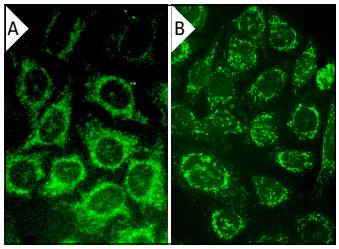
RECOMMENDED SUPPORT REAGENTS

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



KNP-I (D-5): sc-514347. Western blot analysis of KNP-I expression in rat skeletal muscle (**A**), human skeletal muscle (**B**) and human heart (**C**) tissue extracts and A549 (**D**) and HeLa (**E**) whole cell lysates.



KNP-I (D-5): sc-514347. Immunofluorescence staining of methanol-fixed HeLa (**A**) and SW480 (**B**) cells showing mitochondrial localization.

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.