

# KNP-I (MM-7): sc-101055

## 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* SCR-P-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. Characterization of a novel gene, C21orf2, on human chromosome 21q22.3 and its exclusion as the APECED gene by mutation analysis. *Genomics* 47: 64-70.
5. Shin, J.H., et al. 2004. Expression of cystathionine  $\beta$ -synthase, pyridoxal kinase, and ES1 protein homolog (mitochondrial precursor) in fetal Down syndrome brain. *Neurochem. Int.* 45: 73-79.

## CHROMOSOMAL LOCATION

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

## SOURCE

KNP-I (MM-7) is a mouse monoclonal antibody raised against recombinant KNP-I of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

KNP-I (MM-7) is recommended for detection of KNP-I of human origin, D10Jhu81e of mouse origin and the corresponding rat homolog by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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.

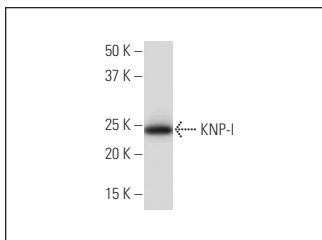
Molecular Weight of KNP-I: 28 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or mouse heart extract: sc-2254.

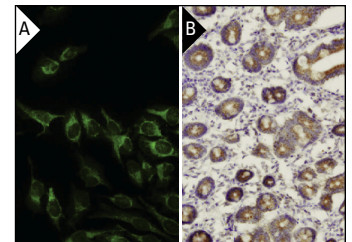
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



KNP-I (MM-7): sc-101055. Western blot analysis of KNP-I expression in HeLa whole cell lysate.



KNP-I (MM-7): sc-101055. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells (A) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human small intestine tissue (B) showing cytoplasmic localization.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.