

KNP-I (E-6): sc-377328

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. 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 (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 175-207 within an internal region of KNP-I of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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-377328 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

KNP-I (E-6) is recommended for detection of KNP-I of human origin and, to a lesser extent, 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).

KNP-I (E-6) is also recommended for detection of KNP-I in additional species, including bovine and porcine.

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.

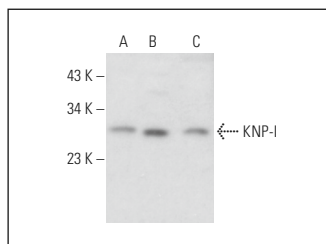
Molecular Weight of KNP-I: 28 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, human skeletal muscle extract: sc-363776 or C2C12 whole cell lysate: sc-364188.

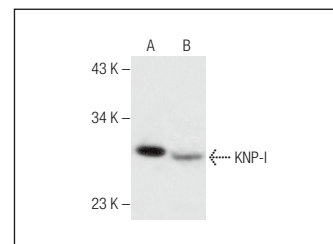
RECOMMENDED SUPPORT REAGENTS

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 (E-6): sc-377328. Western blot analysis of KNP-I expression in C2C12 (A), BC₃H1 (B) and SJRH30 (C) whole cell lysates.



KNP-I (E-6): sc-377328. Western blot analysis of KNP-I expression in rat skeletal muscle (A) and human skeletal muscle (B) tissue extracts.

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.