

KNP-I (E-16): sc-83616

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., Rochefort, D.L., Kibar, Z., Fon, E.A., Han, F., Cochius, J., Kang, X., Baird, S., Korneluk, R.G., Andermann, E., Rommens, J.M. and Rouleau, G.A. 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., Kudoh, J., Minoshima, S., Kawasaki, K., Asakawa, S., Ito, F. and Shimizu, N. 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., Chen, H., Rossier, C., Lalioti, M.D. and Antonarakis, S.E. 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., Kyriakou, D.S., Peterson, P., Heino, M., Tähtinen, M., Krohn, K., Chen, H., Rossier, C., Lalioti, M.D. and Antonarakis, S.E. 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., Weitzdoerfer, R., Fountoulakis, M. and Lubec, G. 2004. Expression of cystathionine β -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-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of KNP-I of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-83616 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KNP-I (E-16) 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), 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-16) is also recommended for detection of KNP-I in additional species, including equine, canine, bovine and avian.

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: 32 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.