SANTA CRUZ BIOTECHNOLOGY, INC.

LETM1 (B-2): sc-514485

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

LETM1 (leucine zipper-EF-hand-containing transmembrane protein 1, mitochondrial) is a 739 amino acid protein that localizes to the mitochondrial membrane and contains one LETM1 domain and 2 EF-hand calcium-binding domains. Expressed in all fetal and adult tissues, LETM1 has a leucine zipper motif, a transmembrane domain and several phosphorylation sites and, via its EF-hand domains, may function as a calcium-binding protein. Additionally, LETM1 is thought to be involved in maintaining normal mitochondrial function and overall cell viability. Human LETM1 shares 84% similarity with its mouse counterpart, suggesting a conserved role between species. Deletions in the gene encoding LETM1 are associated with Wolf-Hirschhorn syndrome (WHS), a congenital syndrome characterized by a number of abnormalities, including mental retardation, seizures, heart defects, fused teeth, hearing loss, a webbed neck and renal abnormalities.

REFERENCES

1. Endele, S., et al. 1999. LETM1, a novel gene encoding a putative EF-hand Ca^{2+}-binding protein, flanks the Wolf-Hirschhorn syndrome (WHS) critical region and is deleted in most WHS patients. Genomics 60: 218-225.
2. Rauch, A., et al. 2001. First known microdeletion within the Wolf-Hirschhorn syndrome critical region refines genotype-phenotype correlation. Am. J. Med. Genet. 99: 338-342.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604407. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Zollino, M., et al. 2003. Mapping the Wolf-Hirschhorn syndrome phenotype outside the currently accepted WHS critical region and defining a new critical region, WHSCR-2. Am. J. Hum. Genet. 72: 590-597.
5. Schlickum, S., et al. 2004. LETM1, a gene deleted in Wolf-Hirschhorn syndrome, encodes an evolutionarily conserved mitochondrial protein. Genomics 83: 254-261.
6. Nowikovsky, K., et al. 2004. The LETM1/YOL027 gene family encodes a factor of the mitochondrial K^+ homeostasis with a potential role in the Wolf-Hirschhorn syndrome. J. Biol. Chem. 279: 30307-30315.

CHROMOSOMAL LOCATION

Genetic locus: LETM1 (human) mapping to 4p16.3.

SOURCE

LETM1 (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 417-435 within an internal region of LETM1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 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-514485 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

LETM1 (B-2) is recommended for detection of LETM1 of 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 LETM1 siRNA (h): sc-89079, LETM1 shRNA Plasmid (h): sc-89079-SH and LETM1 shRNA (h) Lentiviral Particles: sc-89079-V.

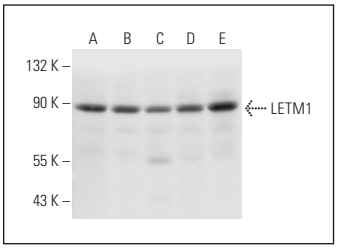
Molecular Weight of LETM1: 85 kDa.

Positive Controls: Ramos cell lysate: sc-2216, MOLT-4 cell lysate: sc-2233 or Jurkat whole cell lysate: sc-2204.

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



LETM1 (B-2): sc-514485. Western blot analysis of LETM1 expression in A549 (**A**), HeLa (**B**), Jurkat (**C**), MOLT-4 (**D**) and Ramos (**E**) whole cell lysates.

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.

PROTOCOLS

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