

MRP-L18 (E-12): sc-107768

BACKGROUND

Mitochondrial ribosomes consist of a large 39S subunit and a small 28S subunit, both of which are comprised of multiple mitochondrial ribosomal proteins (MRPs) that are encoded by nuclear genes and are essential for protein synthesis within mitochondria. MRP-L18 (mitochondrial ribosomal protein L18), also known as L18mt or HSPC071, is a 180 amino acid protein that localizes to the mitochondrion, where it exists as a component of the 39S ribosomal subunit and works in conjunction with MRPs to mediate protein synthesis. The gene encoding MRP-L18 maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

1. Kenmochi, N., et al. 2001. The human mitochondrial ribosomal protein genes: mapping of 54 genes to the chromosomes and implications for human disorders. *Genomics* 77: 65-70.
2. Koc, E.C., et al. 2001. The large subunit of the mammalian mitochondrial ribosome. Analysis of the complement of ribosomal proteins present. *J. Biol. Chem.* 276: 43958-43969.
3. Zhang, Z. and Gerstein, M. 2003. Identification and characterization of over 100 mitochondrial ribosomal protein pseudogenes in the human genome. *Genomics* 81: 468-480.
4. O'Brien, T.W. 2003. Properties of human mitochondrial ribosomes. *IUBMB Life* 55: 505-513.
5. Sylvester, J.E., et al. 2004. Mitochondrial ribosomal proteins: candidate genes for mitochondrial disease. *Genet. Med.* 6: 73-80.
6. O'Brien, T.W., et al. 2005. Nuclear MRP genes and mitochondrial disease. *Gene* 354: 147-151.

CHROMOSOMAL LOCATION

Genetic locus: MRPL18 (human) mapping to 6q25.3; Mrpl18 (mouse) mapping to 17 A1.

SOURCE

MRP-L18 (E-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MRP-L18 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107768 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

MRP-L18 (E-12) is recommended for detection of MRP-L18 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with other MRP-L family members.

MRP-L18 (E-12) is also recommended for detection of MRP-L18 in additional species, including bovine.

Suitable for use as control antibody for MRP-L18 siRNA (h): sc-95080, MRP-L18 siRNA (m): sc-149586, MRP-L18 shRNA Plasmid (h): sc-95080-SH, MRP-L18 shRNA Plasmid (m): sc-149586-SH, MRP-L18 shRNA (h) Lentiviral Particles: sc-95080-V and MRP-L18 shRNA (m) Lentiviral Particles: sc-149586-V.

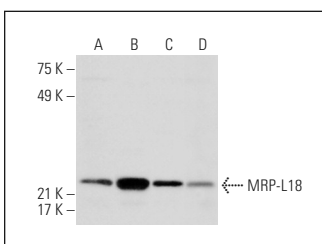
Molecular Weight of MRP-L18: 21 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HUV-EC-C whole cell lysate: sc-364180 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MRP-L18 (E-12): sc-107768. Western blot analysis of MRP-L18 expression in K-562 (A), U-251-MG (B), HUV-EC-C (C) and NTERA-2 cl.D1 (D) 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.

PROTOCOLS

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