



MRP-L51 (G-14): sc-107794

BACKGROUND

Mammalian mitochondrial ribosomes (mitoribosomes) are responsible for protein synthesis within the mitochondrion. The mitoribosomes are composed of a 4:1 ratio of protein to RNA, with the proteins forming two subunits, the 28S subunit and the 39S subunit. Across species, the proteins that make up the mitoribosome subunits vary greatly in sequence, preventing easy recognition by sequence homology. MRP-L51 (mitochondrial ribosomal protein L51), also known as CDA09, MRP64, bMRP64 or HSPC241, is a 128 amino acid mitochondrial ribosomal protein. MRP-L51 is a component of the mitochondrial ribosome large subunit (39S) which consists of a 16S rRNA and about 50 distinct proteins.

REFERENCES

1. Pietromonaco, S.F., Denslow, N.D. and O'Brien, T.W. 1991. Proteins of mammalian mitochondrial ribosomes. *Biochimie* 73: 827-835.
2. Graack, H.R. and Wittmann-Liebold, B. 1998. Mitochondrial ribosomal proteins (MRPs) of yeast. *Biochem. J.* 329: 433-448.
3. Graack, H.R., Bryant, M.L. and O'Brien, T.W. 1999. Identification of mammalian mitochondrial ribosomal proteins (MRPs) by N-terminal sequencing of purified bovine MRPs and comparison to data bank sequences: the large subribosomal particle. *Biochemistry* 38: 16569-16577.
4. Suzuki, T., Terasaki, M., Takemoto-Hori, C., Hanada, T., Ueda, T., Wada, A. and Watanabe, K. 2001. Proteomic analysis of the mammalian mitochondrial ribosome. Identification of protein components in the 28S small subunit. *J. Biol. Chem.* 276: 33181-33195.
5. Koc, E.C., Burkhart, W., Blackburn, K., Moyer, M.B., Schlatzer, D.M., Moseley, A. and Spemulli, L.L. 2001. The large subunit of the mammalian mitochondrial ribosome. Analysis of the complement of ribosomal proteins present. *J. Biol. Chem.* 276: 43958-43969.
6. Gan, X., Kitakawa, M., Yoshino, K., Oshiro, N., Yonezawa, K. and Isono, K. 2002. Tag-mediated isolation of yeast mitochondrial ribosome and mass spectrometric identification of its new components. *Eur. J. Biochem.* 269: 5203-5214.
7. O'Brien, T.W. 2003. Properties of human mitochondrial ribosomes. *IUBMB Life* 55: 505-513.
8. Wang, Z., Cotney, J. and Shadel, G.S. 2007. Human mitochondrial ribosomal protein MRP-L12 interacts directly with mitochondrial RNA polymerase to modulate mitochondrial gene expression. *J. Biol. Chem.* 282: 12610-12618.
9. Smith, T.F., Lee, J.C., Gutell, R.R. and Hartman, H. 2008. The origin and evolution of the ribosome. *Biol. Direct.* 3: 16.

CHROMOSOMAL LOCATION

Genetic locus: MRPL51 (human) mapping to 12p13.31; Mrpl51 (mouse) mapping to 6 F3.

STORAGE

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

SOURCE

MRP-L51 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MRP-L51 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-107794 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MRP-L51 (G-14) is recommended for detection of MRP-L51 of mouse, rat and human origin 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).

Suitable for use as control antibody for MRP-L51 siRNA (h): sc-96095, MRP-L51 siRNA (m): sc-149612, MRP-L51 shRNA Plasmid (h): sc-96095-SH, MRP-L51 shRNA Plasmid (m): sc-149612-SH, MRP-L51 shRNA (h) Lentiviral Particles: sc-96095-V and MRP-L51 shRNA (m) Lentiviral Particles: sc-149612-V.

Molecular Weight of MRP-L51: 15 kDa.

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) 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.

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.