

MRP-S22 (P-14): sc-100043

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-S22 (mitochondrial 28S ribosomal protein S22), also known as S22mt, is a 360 amino acid mitochondrial ribosomal protein. Localized to the mitochondria, MRP-S22 is present in the 28S subunit of the mitoribosomes. Defects of MRP-S22 are the cause of combined oxidative phosphorylation deficiency type 5 (COXPD5). COXPD5 is an antenatal mitochondrial disease characterized by hypotonia, edema, cardiomyopathy and tubulopathy.

REFERENCES

1. Koc, E.C., et al. 2000. A proteomics approach to the identification of mammalian mitochondrial small subunit ribosomal proteins. *J. Biol. Chem.* 275: 32585-32591.
2. Cavdar Koc, E., et al. 2001. The small subunit of the mammalian mitochondrial ribosome. Identification of the full complement of ribosomal proteins present. *J. Biol. Chem.* 276: 19363-19374.
3. Zhang, Z., et al. 2003. Identification and characterization of over 100 mitochondrial ribosomal protein pseudogenes in the human genome. *Genomics* 81: 468-480.
4. Crisponi, L., et al. 2004. FOXL2 inactivation by a translocation 171 kb away: analysis of 500 kb of chromosome 3 for candidate long-range regulatory sequences. *Genomics* 83: 757-764.
5. Guo, D., et al. 2005. Proteomic analysis of SUMO4 substrates in HEK293 cells under serum starvation-induced stress. *Biochem. Biophys. Res. Commun.* 337: 1308-1318.
6. Saada, A., et al. 2007. Antenatal mitochondrial disease caused by mitochondrial ribosomal protein (MRPS22) mutation. *J. Med. Genet.* 44: 784-786.
7. Emdadul Haque, M., et al. 2008. The effect of mutated mitochondrial ribosomal proteins S16 and S22 on the assembly of the small and large ribosomal subunits in human mitochondria. *Mitochondrion* 8: 254-261.
8. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 611719. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: MRPS22 (human) mapping to 3q23; Mrps22 (mouse) mapping to 9 E3.3.

SOURCE

MRP-S22 (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MRP-S22 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 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-100043 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MRP-S22 (P-14) is recommended for detection of MRP-S22 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); non cross-reactive with other MRP family members.

MRP-S22 (P-14) is also recommended for detection of MRP-S22 in additional species, including bovine.

Suitable for use as control antibody for MRP-S22 siRNA (h): sc-78437, MRP-S22 siRNA (m): sc-149623, MRP-S22 shRNA Plasmid (h): sc-78437-SH, MRP-S22 shRNA Plasmid (m): sc-149623-SH, MRP-S22 shRNA (h) Lentiviral Particles: sc-78437-V and MRP-S22 shRNA (m) Lentiviral Particles: sc-149623-V.

Molecular Weight of MRP-S22: 41 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.