

MRRF (J-Q7): sc-100969



The Power to Question

BACKGROUND

The termination of protein synthesis is carried out by a variety of auxiliary factors that ensure the proper release of newly formed proteins. Once translation is complete, mRNA and P-site deacylated tRNA remain attached to the ribosome in a post-termination complex (post-TC) that must be dissociated and recycled in order for another round of translation to take place. MRRF (mitochondrial ribosome recycling factor), also known as RRF, MRFF or MTRRF, is a 262 amino acid protein that belongs to the RRF (ribosome recycling factor) family. Localized to mitochondria, MRRF is required for the release of ribosomes from mRNA at the end of protein biosynthesis. Via its ability to recycle ribosomes throughout translation, MRRF may actually increase overall translational efficiency, thereby playing an important role in the rate of protein synthesis. Multiple isoforms of MRRF are expressed due to alternative splicing events.

REFERENCES

1. Zhang, Y. and Spremulli, L.L. 1998. Identification and cloning of human mitochondrial translational release factor 1 and the ribosome recycling factor. *Biochim. Biophys. Acta* 1443: 245-250.
2. Hansen, L.L., Jørgensen, R. and Justesen, J. 2000. Assignment of the human mitochondrial translational release factor 1 (MTRF1) to chromosome 13q14.1-q14.3 and of the human mitochondrial ribosome recycling factor (MRRF) to chromosome 9q32-q34.1 with radiation hybrid mapping. *Cytogenet. Cell Genet.* 88: 91-92.
3. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 604602. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Hirokawa, G., Kiel, M.C., Muto, A., Kawai, G., Igarashi, K., Kaji, H. and Kaji, A. 2002. Binding of ribosome recycling factor to ribosomes, comparison with tRNA. *J. Biol. Chem.* 277: 35847-35852.
5. Hirokawa, G., Nijman, R.M., Raj, V.S., Kaji, H., Igarashi, K. and Kaji, A. 2005. The role of ribosome recycling factor in dissociation of 70S ribosomes into subunits. *RNA* 11: 1317-1328.
6. Pisarev, A.V., Hellen, C.U. and Pestova, T.V. 2007. Recycling of eukaryotic posttermination ribosomal complexes. *Cell* 131: 286-299.

CHROMOSOMAL LOCATION

Genetic locus: MRRF (human) mapping to 9q33.2.

SOURCE

MRRF (J-Q7) is a mouse monoclonal antibody raised against recombinant MRRF of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

MRRF (J-Q7) is recommended for detection of MRRF of 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), immunohistochemistry (including paraffin-embedded sections) (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 MRRF siRNA (h): sc-92847, MRRF shRNA Plasmid (h): sc-92847-SH and MRRF shRNA (h) Lentiviral Particles: sc-92847-V.

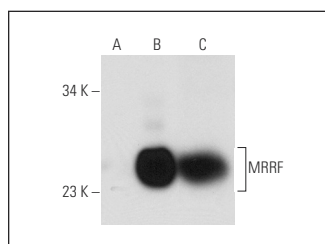
Molecular Weight of MRRF: 29 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MRRF (h2): 293 Lysate: sc-113108 or HeLa nuclear extract: sc-2120.

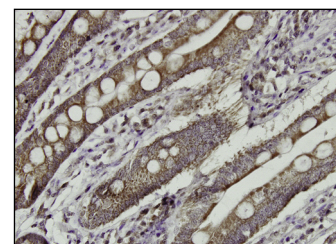
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MRRF (J-Q7): sc-100969. Western blot analysis of MRRF expression in non-transfected 293: sc-110760 (A), human MRRF transfected 293: sc-113108 (B) and A-431 (C) whole cell lysates.



MRRF (J-Q7): sc-100969. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human small intestine tissue showing cytoplasmic localization.

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 for detailed protocols and support products.