SANTA CRUZ BIOTECHNOLOGY, INC.

mrnp41 (G-3): sc-393625

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The Power to Question

BACKGROUND

Mrnp41 (mRNA-binding protein, 41-KD), also known as Rae1 protein homolog and mRNA export factor, is a 368 amino acid protein that binds mRNA and is involved in nucleocytoplasmic transport. Though characterized in both the nucleus and cytoplasm, mrnp41 is primarily localized to the nuclear pore complex in the nuclear envelope. Mutations in mrnp41 may result in the accumulation of poly(A)-containing mRNA in the nucleus, further supporting the role of mrnp41 as a primary nuclear exporter of mRNA. Along with Nup98, mrnp41 has been shown to regulate E-cadherin, an activating subunit of the anaphase-promoting complex complex, which results in the prevention of securin degradation, therefore suggesting that mrnp41 may play a potential role in maintaining euploidy. Also, during mitosis, both mrnp41 and NuMA have been shown to be required for bipolar spindle formation.

REFERENCES

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3. Kraemer, D., et al. 2001. Mrnp41 (Rae 1p) associates with microtubules in HeLa cells and in neurons. Eur. J. Cell Biol. 80: 733-740.
4. Zenklusen, D. and Stutz, F. 2001. Nuclear export of mRNA. FEBS Lett. 498: 150-156.
5. Jeganathan, K.B., et al. 2005. The Rae1-Nup98 complex prevents aneuploidy by inhibiting securin degradation. Nature 438: 1036-1039.
6. Wong, R.W., et al. 2006. Rae1 interaction with NuMA is required for bipolar spindle formation. Proc. Natl. Acad. Sci. USA 103: 19783-19787.
7. Baker, D.J., et al. 2007. Mitotic regulation of the anaphase-promoting complex. Cell. Mol. Life Sci. 64: 589-600.
8. Satterly, N., et al. 2007. Influenza virus targets the mRNA export machinery and the nuclear pore complex. Proc. Natl. Acad. Sci. USA 104: 1853-1858.
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CHROMOSOMAL LOCATION

Genetic locus: RAE1 (human) mapping to 20q13.31; Rae1 (mouse) mapping to 2 H3.

SOURCE

mrnp41 (G-3) is a mouse monoclonal antibody raised against amino acids 1-235 mapping at the N-terminus of mrnp41 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.

APPLICATIONS

mrnp41 (G-3) is recommended for detection of mrnp41 of mouse, rat and 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 mrnp41 siRNA (h): sc-75825, mrnp41 siRNA (m): sc-75826, mrnp41 shRNA Plasmid (h): sc-75825-SH, mrnp41 shRNA Plasmid (m): sc-75826-SH, mrnp41 shRNA (h) Lentiviral Particles: sc-75825-V and mrnp41 shRNA (m) Lentiviral Particles: sc-75826-V.

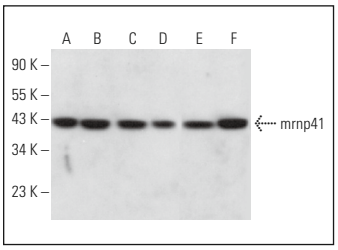
Molecular Weight of mrnp41: 43 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or MCF7 whole cell lysate: sc-2206.

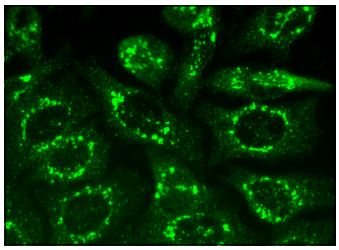
RECOMMENDED SUPPORT REAGENTS

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



mrnp41 (G-3): sc-393625. Western blot analysis of mrnp41 expression in HeLa (**A**), Jurkat (**B**), MCF7 (**C**), 3T3-L1 (**D**), NIH/3T3 (**E**) and F9 (**F**) whole cell lysates.



mrnp41 (G-3): sc-393625. Immunofluorescence staining of methanol-fixed HeLa cells showing perinuclear and cytoplasmic localization.

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.