

RAP55 (G-5): sc-398633

BACKGROUND

RAP55, also known as LSM14A (LSM14 homolog A), is a 463 amino acid member of the LSM14 family that contains a FFD-TFG box domain. The LSM14 domain and the RGG repeats of RAP55 are required for accumulation in P-bodies, and the region containing the FDF motif is responsible for cytoplasmic retention. RAP55, and all other Sm-like proteins, contain the Sm sequence motif, which consists of two regions separated by a linker of variable length that folds as a loop. The Sm-like proteins are thought to form a stable heteromer present in tri-snRNP particles, which are important for pre-mRNA splicing. RAP55 is phosphorylated upon DNA damage, probably by ATM or ATR. Existing as two alternatively spliced isoforms, the RAP55 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, mosquito, *Drosophila*, *C. elegans*, *S. pombe*, *S. cerevisiae*, *K. lactis*, *E. gossypii*, *M. grisea* and *N. crassa*, and maps to human chromosome 19q13.11.

REFERENCES

1. Lieb, B., et al. 1998. Identification of a novel mRNA-associated protein in oocytes of *Pleurodeles waltl* and *Xenopus laevis*. *Exp. Cell Res.* 245: 272-281.
2. Tanaka, K.J., et al. 2006. RAP55, a cytoplasmic mRNP component, represses translation in *Xenopus oocytes*. *J. Biol. Chem.* 281: 40096-40106.
3. Yang, W.H., et al. 2006. RNA-associated protein 55 (RAP55) localizes to mRNA processing bodies and stress granules. *RNA* 12: 547-554.
4. Matsuoka, S., et al. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. *Science* 316: 1160-1166.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610677. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Dephoure, N., et al. 2008. A quantitative atlas of mitotic phosphorylation. *Proc. Natl. Acad. Sci. USA* 105: 10762-10767.
7. Marnef, A., et al. 2009. RAP55: insights into an evolutionarily conserved protein family. *Int. J. Biochem. Cell Biol.* 41: 977-981.

CHROMOSOMAL LOCATION

Genetic locus: LSM14A (human) mapping to 19q13.11; Lsm14a (mouse) mapping to 7 B1.

SOURCE

RAP55 (G-5) is a mouse monoclonal antibody raised against amino acids 103-197 mapping within an internal region of RAP55 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

RAP55 (G-5) is recommended for detection of RAP55 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 RAP55 siRNA (h): sc-97825, RAP55 siRNA (m): sc-152701, RAP55 shRNA Plasmid (h): sc-97825-SH, RAP55 shRNA Plasmid (m): sc-152701-SH, RAP55 shRNA (h) Lentiviral Particles: sc-97825-V and RAP55 shRNA (m) Lentiviral Particles: sc-152701-V.

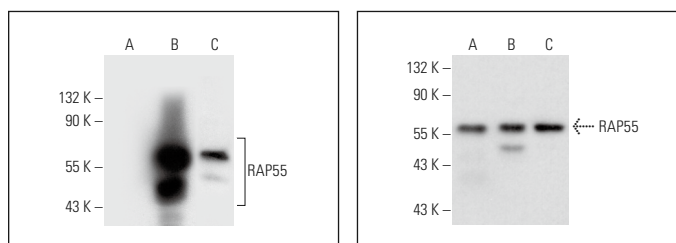
Molecular Weight of RAP55: 51 kDa.

Positive Controls: RAP55 (m): 293T Lysate: sc-127442, A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

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



RAP55 (G-5): sc-398633. Western blot analysis of RAP55 expression in non-transfected 293T: sc-117752 (A), mouse RAP55 transfected 293T: sc-127442 (B) and HeLa (C) whole cell lysates.

RAP55 (G-5): sc-398633. Western blot analysis of RAP55 expression in A549 (A), KNRK (B) and 3T3-L1 (C) whole cell lysates.

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.