SANTA CRUZ BIOTECHNOLOGY, INC.

SRP68 (4-YD13): sc-135569

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The Power to Question

BACKGROUND

Signal recognition particle (SRP) is a ribonucleoprotein composed of an Alu domain and an S domain that contains six proteins. The S domain contains a unique sequence of SRP RNA and four SRP proteins: SRP19, SRP54, SRP68 and SRP72. The Alu domain contains two SRP proteins: SRP9 and SRP14. SRP interacts with ribosomes to bring translated membrane and secreted proteins to the endoplasmic reticulum (ER) for proper processing. SRP9 and SRP14 form a heterodimer before binding to SRP RNA, and SRP19 functions in the assembly of SRP and binds to free SRP RNA. This event is a prerequisite for the subsequent binding of SRP54 to helix 8 of SRP RNA in eukaryotes and involves an SRP19-induced conformational change in the RNA. SRP54 interacts with both the nascent signal peptide and SRP RNA. SRP68 binding to SRP RNA enhances SRP72 binding. SRP19, SRP68 and SRP72 are localized in the nucleolus and cytoplasm, whereas SRP54 is only localized in the cytoplasm. SRP68 also accumulates in the ER. Thus, the nucleolus is the site of assembly and/or interaction between the family of ribonucleoproteins involved in protein synthesis.

REFERENCES

1. Walter, P., et al. 1983. Subcellular distribution of signal recognition particle and 7SL-RNA determined with polypeptide-specific antibodies and complementary DNA probe. J. Cell Biol. 97: 1693-1699.
2. Lingelbach, K., et al. 1988. Isolation and characterization of a cDNA clone encoding the 19 kDa protein of signal recognition particle (SRP): expression and binding to 7SL RNA. Nucleic Acids Res. 16: 9431-9442.
3. Herz, J., et al. 1990. The 68 kDa protein of signal recognition particle contains a glycine-rich region also found in certain RNA-binding proteins. FEBS Lett. 276: 103-107.
4. Zwieb, C. 1997. The uRNA database. Nucleic Acids Res. 25: 102-103.
5. Gowda, K., et al. 1998. Protein SRP54 of human signal recognition particle: cloning, expression, and comparative analysis of functional sites. Gene 207: 197-207.
6. Politz, J.C., et al. 2000. Signal recognition particle components in the nucleolus. Proc. Natl. Acad. Sci. USA 97: 55-60.
7. Pederson, T., et al. 2000. The nucleolus and the four ribonucleoproteins of translation. J. Cell Biol. 148: 1091-1095.
8. Wild, K., et al. 2001. Crystal structure of an early protein-RNA assembly complex of the signal recognition particle. Science 294: 598-601.

CHROMOSOMAL LOCATION

Genetic locus: SRP68 (human) mapping to 17q25.1.

SOURCE

SRP68 (4-YD13) is a mouse monoclonal antibody raised against recombinant SRP68 protein 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.

APPLICATIONS

SRP68 (4-YD13) is recommended for detection of SRP68 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SRP68 siRNA (h): sc-94109, SRP68 shRNA Plasmid (h): sc-94109-SH and SRP68 shRNA (h) Lentiviral Particles: sc-94109-V.

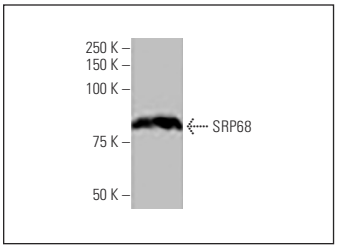
Molecular Weight of SRP68: 68 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

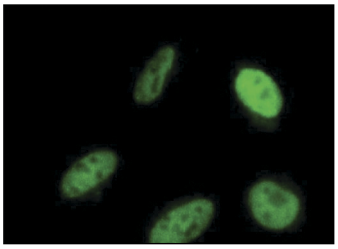
RECOMMENDED SUPPORT REAGENTS

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



SRP68 (4-YD13): sc-135569. Western blot analysis of SRP68 expression in HeLa whole cell lysate.



SRP68 (4-YD13): sc-135569. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Min, K.W., et al. 2017. eIF4E phosphorylation by MST1 reduces translation of a subset of mRNAs, but increases lncRNA translation. Biochim. Biophys. Acta 1860: 761-772.

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.