SANTA CRUZ BIOTECHNOLOGY, INC.

CPSF4 (D-1): sc-390516

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CPSF4 (cleavage and polyadenylation specificity factor subunit 4, NS1 effector domain-binding protein 1) is a nuclear protein that belongs to the CPSF4/YTH1 family and contains five C3H1-type zinc fingers and one CCHC-type zinc finger. CPSF4 is a component of the cleavage and polyadenylation specificity factor (CPSF) complex that plays a key role in pre-mRNA 3'-end formation. CPSF is a multisubunit factor consisting of four subunits. CPSF recognizes the AAUAAA signal in the pre-mRNA and interacts with other proteins to facilitate both RNA cleavage and poly(A) synthesis. The largest subunit of CPSF can, by itself, bind preferentially to AAUAAA-containing RNAs and binds specifically to both the suppressor of forked subunit of the cleavage stimulatory factor (CstF) and to poly (A) polymerase. snRNPA protein (U1 snRNP-A) interacts with and affects the activity of CPSF by stabilizing the interaction of CPSF with the AAUAAA-containing RNAs to increase the efficiency of polyadenylation. Efficient processing of 3' core poly(A) site also requires specific sequences located 76 nucleotides upstream of the AAUAAA hexamer.

REFERENCES

1. Jenny, A. and Keller, W. 1995. Cloning and cDNAs encoding the 160 kDa subunit of the bovine cleavage and polyadenylation specificity factor. Nucleic Acids Res. 23: 2629-2635.
2. Barabino, S.M., et al. 1997. The 30-kD subunit of mammalian cleavage and polyadenylation specificity factor and its yeast homolog are RNA-binding zinc finger proteins. Genes Dev. 11: 1703-1716.
3. Salinas, C.A., et al. 1998. Characterization of a *Drosophila* homologue of the 160-kDa subunit of the cleavage and polyadenylation specificity factor CPSF. Mol. Gen. Genet. 257: 672-680.
4. de Vries, H., et al. 2000. Human pre-mRNA cleavage factor II_m contains homologs of yeast proteins and bridges two other cleavage factors. EMBO J. 19: 5895-5904.
5. Kaufmann, I., et al. 2004. Human Fip1 is a subunit of CPSF that binds to U-rich RNA elements and stimulates poly(A) polymerase. EMBO J. 23: 616-626.

CHROMOSOMAL LOCATION

Genetic locus: CPSF4 (human) mapping to 7q22.1; Cpsf4 (mouse) mapping to 5 G2.

SOURCE

CPSF4 (D-1) is a mouse monoclonal antibody raised against amino acids 1-102 mapping at the N-terminus of CPSF4 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

CPSF4 (D-1) is recommended for detection of CPSF4 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).

CPSF4 (D-1) is also recommended for detection of CPSF4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CPSF4 siRNA (h): sc-72988, CPSF4 siRNA (m): sc-72989, CPSF4 shRNA Plasmid (h): sc-72988-SH, CPSF4 shRNA Plasmid (m): sc-72989-SH, CPSF4 shRNA (h) Lentiviral Particles: sc-72988-V and CPSF4 shRNA (m) Lentiviral Particles: sc-72989-V.

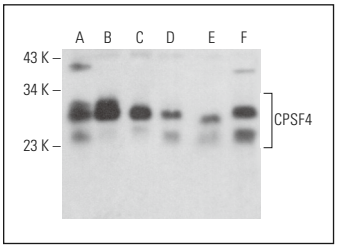
Molecular Weight of CPSF4: 30 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, A-431 whole cell lysate: sc-2201 or HeLa whole cell lysate: sc-2200.

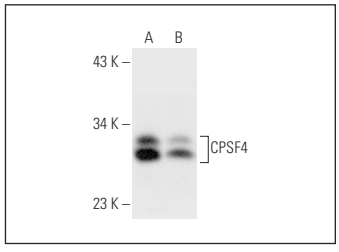
RECOMMENDED SUPPORT REAGENTS

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



CPSF4 (D-1): sc-390516. Western blot analysis of CPSF4 expression in Jurkat (**A**), A-431 (**B**), SP2/0 (**C**), NIH/3T3 (**D**), PC-12 (**E**) and KNRK (**F**) whole cell lysates.



CPSF4 (D-1): sc-390516. Western blot analysis of CPSF4 expression in Jurkat (**A**) and HeLa (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, H., et al. 2022. Targeting the mRNA endonuclease CPSF73 inhibits breast cancer cell migration, invasion, and self-renewal. iScience 25: 104804.

RESEARCH USE

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