

CPSF1 (E-20): sc-17290

BACKGROUND

Processing of the 3' end of mRNA depends on several protein factors, one of which is the cleavage and polyadenylation specificity factor (CPSF). CPSF is required for both the cleavage of the mRNA precursor and for polyadenylation. CPSF, a multisubunit factor consisting of four subunits, is localized to the nucleoplasm and is excluded from cytoplasmic and nucleolar structures in HeLa cells. 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. U1 snRNP-A protein (U1A) 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 sequences 76 nucleotides upstream of the AAUAA hexamer. The largest subunit is able to interact directly with the HIV-1 upstream element to direct a stable binding of CPSF to the pre-mRNA and enhance the efficiency of polyadenylation.

REFERENCES

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- Gilmartin, G.M., et al. 1995. CPSF recognition of an HIV-1 mRNA 3'-processing enhancer: multiple sequence contacts involved in poly(A) site definition. *Genes Dev.* 9: 72-83.
- Murthy, K.G. and Manley, J.L. 1995. The 160 kDa subunit of human cleavage-polyadenylation specificity factor coordinates pre-mRNA 3'-end formation. *Genes Dev.* 9: 2672-2683.
- Jenny, A., et al. 1995. Cloning and cDNAs encoding the 160 kDa subunit of the bovine cleavage and polyadenylation specificity factor. *Nucleic Acids Res.* 23: 2629-2635.
- Lutz, C.S., et al. 1996. Interaction between the U1 snRNP-A protein and the 160 kDa subunit of cleavage-polyadenylation specificity factor increases polyadenylation efficiency *in vitro*. *Genes Dev.* 10: 325-337.

CHROMOSOMAL LOCATION

Genetic locus: CPSF1 (human) mapping to 8q24.3; Cpsf1 (mouse) mapping to 15 D3.

SOURCE

CPSF1 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CPSF of human origin.

STORAGE

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

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17290 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CPSF1 (E-20) is recommended for detection of CPSF1 of mouse, rat and 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).

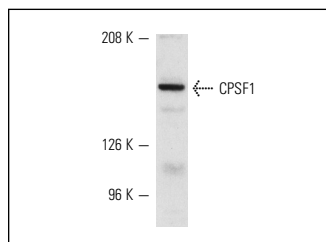
CPSF1 (E-20) is also recommended for detection of CPSF1 in additional species, including canine and bovine.

Suitable for use as control antibody for CPSF1 siRNA (h): sc-35101, CPSF1 siRNA (m): sc-35102, CPSF1 shRNA Plasmid (h): sc-35101-SH, CPSF1 shRNA Plasmid (m): sc-35102-SH, CPSF1 shRNA (h) Lentiviral Particles: sc-35101-V and CPSF1 shRNA (m) Lentiviral Particles: sc-35102-V.

Molecular Weight of CPSF1: 160 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207.

DATA



CPSF1 (E-20) : sc-17290. Western blot analysis of CPSF1 (160 kDa subunit) expression in BJAB whole cell lysate.

SELECT PRODUCT CITATIONS

- Venkataraman, K., et al. 2005. Analysis of a noncanonical poly(A) site reveals a tripartite mechanism for vertebrate poly(A) site recognition. *Genes Dev.* 19: 1315-1327.

PROTOCOLS

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