

CstF-64 (B-3): sc-166647

BACKGROUND

Polyadenylation of mRNA precursors is a two-step reaction that requires multiple protein factors. The first step, endonucleolytic cleavage of polyadenylation substrates, requires CstF (cleavage stimulation factor), a heterotrimer that is composed of three distinct subunits. CstF-64 contains an RNA binding domain and is responsible for the RNA binding activity of CstF. CstF-64 is expressed in all somatic cells and in pre- and postmeiotic, but not meiotic, germ cells. However, a large variant of CstF-64, called t CstF-64, is abundantly expressed in meiotic and postmeiotic cells in the testis and to a lesser extent in the brain, and promotes the germ cell pattern of polyadenylation. The gene encoding CstF-64 (also designated CSTF2) maps to the X chromosome, whereas t CstF-64 is encoded by an autosomal gene. The increase in CstF-64 concentration during B cell activation switches IgM heavy chain mRNA expression from membrane-bound to secreted forms, suggesting that CstF-64 plays a key role in regulating IgM heavy chain expression during B cell differentiation.

REFERENCES

1. Takagaki, Y., et al. 1990. A multisubunit factor, CstF, is required for polyadenylation of mammalian pre-mRNAs. *Genes Dev.* 4: 2112-2120.
2. Takagaki, Y., et al. 1996. The polyadenylation factor CstF-64 regulates alternative processing of IgM heavy chain pre-mRNA during B cell differentiation. *Cell* 87: 941-952.
3. Takagaki, Y. and Manley, J.L. 1998. Levels of polyadenylation factor CstF-64 control IgM heavy chain mRNA accumulation and other events associated with B cell differentiation. *Mol. Cell* 2: 761-771.
4. Wallace, A.M., et al. 1999. Two distinct forms of the 64,000 M_r protein of the cleavage stimulation factor are expressed in mouse male germ cells. *Proc. Natl. Acad. Sci. USA* 96: 6763-6768.

CHROMOSOMAL LOCATION

Genetic locus: CSTF2 (human) mapping to Xq22.1; Cstf2 (mouse) mapping to X E3.

SOURCE

CstF-64 (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 139-172 near the N-terminus of CstF-64 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166647 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

CstF-64 (B-3) is recommended for detection of CstF-64 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).

CstF-64 (B-3) is also recommended for detection of CstF-64 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for CstF-64 siRNA (h): sc-35118, CstF-64 siRNA (m): sc-35119, CstF-64 shRNA Plasmid (h): sc-35118-SH, CstF-64 shRNA Plasmid (m): sc-35119-SH, CstF-64 shRNA (h) Lentiviral Particles: sc-35118-V and CstF-64 shRNA (m) Lentiviral Particles: sc-35119-V.

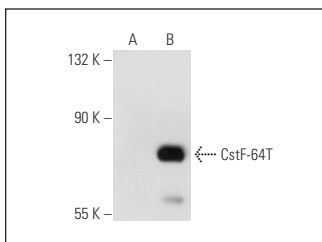
Molecular Weight of CstF-64: 64 kDa.

Positive Controls: HeLa + PMA nuclear extract: sc-2121, CstF-64T (h): 293T Lysate: sc-114748 or BJAB nuclear extract: sc-2145

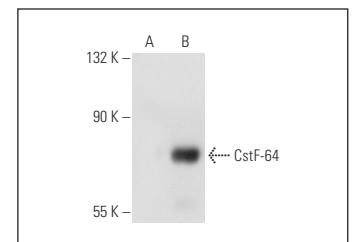
RECOMMENDED SUPPORT REAGENTS

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



CstF-64 (B-3): sc-166647. Western blot analysis of CstF-64T expression in non-transfected: sc-117752 (A) and human CstF-64T transfected: sc-114748 (B) 293T whole cell lysates.



CstF-64 (B-3): sc-166647. Western blot analysis of CstF-64 expression in non-transfected: sc-117752 (A) and human CstF-64 transfected: sc-175895 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Eifler, T.T., et al. 2015. Cyclin-dependent kinase 12 increases 3' end processing of growth factor-induced c-FOS transcripts. *Mol. Cell. Biol.* 35: 468-478.

RESEARCH USE

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