

SLBP (H-10): sc-390833

BACKGROUND

Replication-dependent histone mRNAs lack polyadenylated tails and instead end in a conserved stem-loop. The stem-loop binding protein (SLBP) binds the 3' end of histone mRNA and contains a 73 amino acid RNA-binding domain. SLBP mediates the interaction of the histone pre-mRNA with U7 SnRNP to facilitate 3' end processing. SLBP is required for the translation of stem-loop mRNAs. SLBP forms a stable complex with U7 SnRNP in the nucleus as well as the cytoplasm. hZFP100 is a zinc finger protein that interacts with the SLBP/RNA complex but not with free SLBP. During the cell cycle, SLBP increases in the late G₁ and decreases in the S/G₂ border. The regulation of SLBP occurs at the level of translation. Specifically, two phosphorylation events on threonine 99 and threonine 104 trigger the degradation of SLBP in late S phase cells.

REFERENCES

1. Wang, Z.F., et al. 1996. The protein that binds the 3' end of histone mRNA: a novel RNA-binding protein required for histone pre-mRNA processing. *Genes Dev.* 10: 3028-3040.
2. Martin, F., et al. 1997. The gene for histone RNA hairpin binding protein is located on human chromosome 4 and encodes a novel type of RNA binding protein. *EMBO J.* 16: 769-778.
3. Dominski, Z., et al. 1999. Stem-loop binding protein facilitates 3'-end formation by stabilizing U7 SnRNP binding to histone pre-mRNA. *Mol. Cell. Biol.* 19: 3561-3570.
4. Whitfield, M.L., et al. 2000. Stem-loop binding protein, the protein that binds the 3' end of histone mRNA, is cell cycle regulated by both translational and posttranslational mechanisms. *Mol. Cell. Biol.* 20: 4188-4198.
5. Ling, J., et al. 2002. The histone 3'-terminal stem-loop binding protein enhances translation through a functional and physical interaction with eukaryotic initiation factor 4G (eIF4G) and eIF3. *Mol. Cell. Biol.* 22: 7853-7867.
6. Dominski, Z., et al. 2002. A novel zinc finger protein is associated with U7 SnRNP and interacts with the stem-loop binding protein in the histone pre-mRNP to stimulate 3'-end processing. *Genes Dev.* 16: 58-71.

CHROMOSOMAL LOCATION

Genetic locus: SLBP (human) mapping to 4p16.3; Slbp (mouse) mapping to 5 B2.

SOURCE

SLBP (H-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 208-239 near the C-terminus of SLBP 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.

Blocking peptide available for competition studies, sc-390833 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SLBP (H-10) is recommended for detection of SLBP 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 SLBP siRNA (h): sc-38321, SLBP siRNA (m): sc-38322, SLBP shRNA Plasmid (h): sc-38321-SH, SLBP shRNA Plasmid (m): sc-38322-SH, SLBP shRNA (h) Lentiviral Particles: sc-38321-V and SLBP shRNA (m) Lentiviral Particles: sc-38322-V.

Molecular Weight of SLBP: 31 kDa.

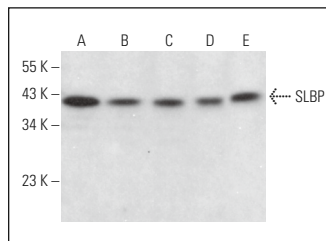
Positive Controls: K-562 whole cell lysate: sc-2203, HEL 92.1.7 cell lysate: sc-2270 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

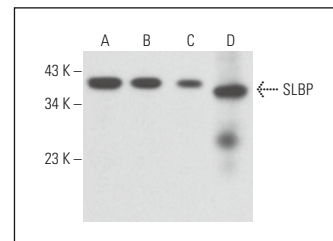
To ensure optimal results, the following support reagents are recommended:

- 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



SLBP (H-10): sc-390833. Western blot analysis of SLBP expression in HEL 92.1.7 (A), K-562 (B), MEG-01 (C), U-2 OS (D) and U-698-M (E) whole cell lysates.



SLBP (H-10): sc-390833. Western blot analysis of SLBP expression in HeLa (A), HEL 92.1.7 (B) and TF-1 (C) whole cell lysates and rat testis tissue extract (D).

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.