

PSF (H-80): sc-28730

BACKGROUND

Pre-mRNA splicing is a critical step in the post-translational regulation of gene expression. The process of removing intron sequences from mRNA is a two-step enzymatic reaction that requires the action of the spliceosome, a large multicomponent ribonucleoprotein complex. The polypyrimidine tract-binding protein (PTB)-associated splicing factor (PSF) is a ubiquitously expressed protein that forms a complex with PTB, also designated hnRNP I, which is required for early spliceosome formation and is essential for catalytic step II. The PSF protein contains two RNA recognition motifs (RRMs), a proline- and glutamine-rich amino terminal domain, and two carboxy-terminal nuclear localization signals. PSF is localized to the nucleus in punctate structures called speckles, which are absent from nucleoli. The localization of PSF to speckles is dependent upon the presence of the second RRM motif. PSF also can associate with the DNA binding domains (DBDs) of thyroid hormone receptors and retinoic acid receptors, where it acts as a repressor by recruiting HDACs to the DBDs. PSF is expressed in neurons during development and may be involved in neuronal differentiation and maturation. PSF is proteolytically cleaved to produce a shorter fragment in myeloid cells.

REFERENCES

1. Patton, J.G., et al. 1993. Cloning and characterization of PSF, a novel pre-mRNA splicing factor. *Genes Dev.* 7: 393-406.
2. Gozani, O., et al. 1994. A novel set of spliceosome-associated proteins and the essential splicing factor PSF bind stably to pre-mRNA prior to catalytic step II of the splicing reaction. *EMBO J.* 13: 3356-3367.
3. Chanas-Sacre, G., et al. 1999. Identification of PSF, the polypyrimidine tract-binding protein-associated splicing factor, as a developmentally regulated neuronal protein. *J. Neurosci. Res.* 57: 62-73.
4. Meissner, M., et al. 2000. Differential nuclear localization and nuclear matrix association of the splicing factors PSF and PTB. *J. Cell. Biochem.* 76: 559-666.
5. Shav-Tal, Y., et al. 2000. Enhanced proteolysis of pre-mRNA splicing factors in myeloid cells. *Exp. Hematol.* 28: 1029-1038.

CHROMOSOMAL LOCATION

Genetic locus: SFPQ (human) mapping to 1p34.3; Sfpq (mouse) mapping to 4 D2.2.

SOURCE

PSF (H-80) is a rabbit polyclonal antibody raised against amino acids 581-660 mapping near the C-terminus of PSF of human origin.

PRODUCT

Each vial contains 200 µg IgG 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

PSF (H-80) is recommended for detection of PSF 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

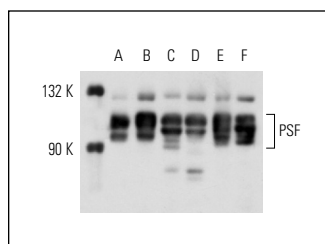
PSF (H-80) is also recommended for detection of PSF in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for PSF siRNA (h): sc-38304, PSF siRNA (m): sc-38305, PSF shRNA Plasmid (h): sc-38304-SH, PSF shRNA Plasmid (m): sc-38305-SH, PSF shRNA (h) Lentiviral Particles: sc-38304-V and PSF shRNA (m) Lentiviral Particles: sc-38305-V.

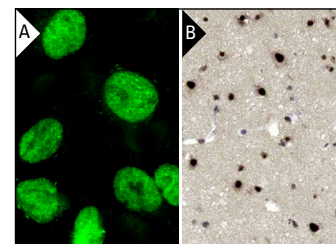
Molecular weight of PSF: 100 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, A-431 nuclear extract: sc-2122 or NIH/3T3 nuclear extract: sc-2138.

DATA



PSF (H-80): sc-28730. Western blot analysis of PSF expression in HeLa (A), A-431 (B), NIH/3T3 (C), 3611-RF (D), Hep G2 (E) and A-673 (F) nuclear extracts.



PSF (H-80): sc-28730. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing nuclear staining of neuronal and non-neuronal cells high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

RESEARCH USE

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

PROTOCOLS

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


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Try **PSF (D-8): sc-271796** or **PSF (G-7): sc-374502**, our highly recommended monoclonal alternatives to PSF (H-80).