

PSF (D-8): sc-271796



The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

PSF (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 451-487 within an internal region of PSF 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.

PSF (D-8) is available conjugated to agarose (sc-271796 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271796 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271796 PE), fluorescein (sc-271796 FITC), Alexa Fluor® 488 (sc-271796 AF488), Alexa Fluor® 546 (sc-271796 AF546), Alexa Fluor® 594 (sc-271796 AF594) or Alexa Fluor® 647 (sc-271796 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271796 AF680) or Alexa Fluor® 790 (sc-271796 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271796 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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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.

APPLICATIONS

PSF (D-8) is recommended for detection of PSF 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), 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).

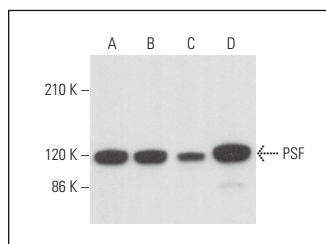
PSF (D-8) is also recommended for detection of PSF in additional species, including equine, bovine and avian.

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.

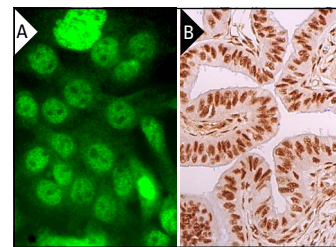
Molecular Weight of PSF: 100 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

DATA



PSF (D-8): sc-271796. Western blot analysis of PSF expression in HeLa (A), Hep G2 (B), Sol8 (C) and MDA-MB-231 (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



PSF (D-8): sc-271796. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Tsukahara, T., et al. 2013. PTB-associated splicing factor (PSF) is a PPARγ-binding protein and growth regulator of colon cancer cells. *PLoS ONE* 8: e58749.
2. Zhang, P., et al. 2019. The lncRNA Neat1 promotes activation of inflammasomes in macrophages. *Nat. Commun.* 10: 1495.
3. Vasquez, G., et al. 2021. Site-specific incorporation of 5'-methyl DNA enhances the therapeutic profile of gapmer ASOs. *Nucleic Acids Res.* 49: 1828-1839.
4. Han, J., et al. 2022. Multilayered control of splicing regulatory networks by DAP3 leads to widespread alternative splicing changes in cancer. *Nat. Commun.* 13: 1793.

PROTOCOLS

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