SANTA CRUZ BIOTECHNOLOGY, INC.

U1 snRNP 70 (E-4): sc-390988

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

U1 small nuclear ribonucleoprotein (U1 snRNP 70 or U1 70) is a component of the RNA spliceosome, a complex of proteins that are required for the precise excision of introns from pre-messenger RNA (pre-mRNA). U1 snRNP 70 specifically associates with the single stranded loop of hairpin 1 on U1 snRNA (small nuclear RNA). Like other snRNPs, U1 snRNP 70 contains a single RNA binding domain of 80-90 amino acids that is located within the central portion of the protein, and is both necessary and sufficient for the specific U1 snRNA binding *in vitro*. This interaction, which occurs independently of ATP, is essential for the commitment to the pre-mRNA splicing pathway, as it facilitates the association of other proteins with the spliceosome. U1 snRNP 70 is diffusely localized in the cytoplasm at the onset of mitosis and as mitosis progresses through telophase, U1 snRNP 70 accumulations in the daughter nuclei.

CHROMOSOMAL LOCATION

Genetic locus: SNRNP70 (human) mapping to 19q13.33; Snrnp70 (mouse) mapping to 7 B4.

SOURCE

U1 snRNP 70 (E-4) is a mouse monoclonal antibody raised against amino acids 183-280 of U1 snRNP 70 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.

U1 snRNP 70 (E-4) is available conjugated to agarose (sc-390988 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390988 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390988 PE), fluorescein (sc-390988 FITC), Alexa Fluor® 488 (sc-390988 AF488), Alexa Fluor® 546 (sc-390988 AF546), Alexa Fluor® 594 (sc-390988 AF594) or Alexa Fluor® 647 (sc-390988 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390988 AF680) or Alexa Fluor® 790 (sc-390988 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

U1 snRNP 70 (E-4) is recommended for detection of U1 snRNP 70 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).

Suitable for use as control antibody for U1 snRNP 70 siRNA (h): sc-36768, U1 snRNP 70 siRNA (m): sc-36769, U1 snRNP 70 shRNA Plasmid (h): sc-36768-SH, U1 snRNP 70 shRNA Plasmid (m): sc-36769-SH, U1 snRNP 70 shRNA (h) Lentiviral Particles: sc-36768-V and U1 snRNP 70 shRNA (m) Lentiviral Particles: sc-36769-V.

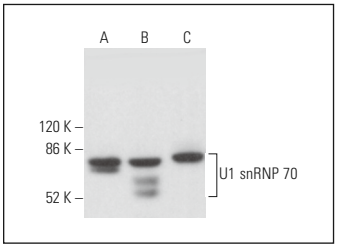
Molecular Weight of U1 snRNP 70: 70 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Jurkat whole cell lysate: sc-2204 or RAW 264.7 whole cell lysate: sc-2211.

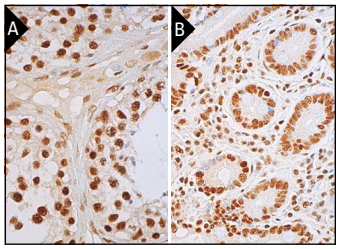
STORAGE

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

DATA



U1 snRNP 70 (E-4): sc-390988. Western blot analysis of U1 snRNP 70 expression in Jurkat (**A**), Hep G2 (**B**) and RAW 264.7 (**C**) whole cell lysates.



U1 snRNP 70 (E-4): sc-390988. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and nuclear staining of Leydig cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small instestine tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Murthy, T., et al. 2018. Cyclin-dependent kinase 1 (CDK1) and CDK2 have opposing roles in regulating interactions of splicing factor 3B1 with chromatin. J. Biol. Chem. 293: 10220-10234.
2. Wang, J., et al. 2021. Persistence of RNA transcription during DNA replication delays duplication of transcription start sites until G_2/M. Cell Rep. 34: 108759.
3. Maron, M.I., et al. 2022. Type I and II PRMTs inversely regulate post-transcriptional intron detention through Sm and CHTOP methylation. Elife 11: e72867.
4. Shao, W., et al. 2022. Phase separation of RNA-binding protein promotes polymerase binding and transcription. Nat. Chem. Biol. 18: 70-80.
5. Han, X., et al. 2024. Nuclear RNA homeostasis promotes systems-level coordination of cell fate and senescence. Cell Stem Cell 31: 694-716.e11.

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.