

U2 SnRNP A (B-3): sc-393804

BACKGROUND

Small nuclear ribonucleoproteins, also known as SnRNPs, combine with other proteins to form spliceosomes, a complex that catalyzes pre-mRNA splicing. There are two types of spliceosomes: U2 and U12. The U2-type spliceosome is found in all eukaryotes and excises U2-type introns, which account for the majority of pre-mRNA introns. The U12-type spliceosome removes U12-type introns, which comprise less than 1% of all human introns. U2 SnRNP A, also known as SNRPA1 or U2A, is a component of the U2 SnRNP that forms a complex with U2 SnRNP B (U2B). Together, U2 SnRNP A and U2 SnRNP B form a complex that binds to the U2 SnRNA hairpin IV. The configuration of this U2 SnRNP A/U2 SnRNP B dimer and the subtle variations of a few key residues regulate the SnRNP-RNA-binding specificity. U2 SnRNP A is a 255 amino acid protein, and two isoforms exist as a result of alternative splicing events.

REFERENCES

1. Sillekens, P.T., et al. 1989. Molecular cloning of the cDNA for the human U2 SnRNA-specific A' protein. *Nucleic Acids Res.* 17: 1893-1906.
2. Crispino, J.D., et al. 1994. Complementation by SR proteins of pre-mRNA splicing reactions depleted of U1 snRNP. *Science* 265: 1866-1869.
3. Blencowe, B.J., et al. 1998. A coactivator of pre-mRNA splicing. *Genes Dev.* 12: 996-1009.
4. Price, S.R., et al. 1998. Crystal structure of the spliceosomal U2B'-U2A' protein complex bound to a fragment of U2 small nuclear RNA. *Nature* 394: 645-650.
5. Eldridge, A.G., et al. 1999. The SRm160/300 splicing coactivator is required for exon-enhancer function. *Proc. Natl. Acad. Sci. USA* 96: 6125-6130.

CHROMOSOMAL LOCATION

Genetic locus: SNRPA1 (human) mapping to 15q26.3; Snrpa1 (mouse) mapping to 7 C.

SOURCE

U2 SnRNP A (B-3) is a mouse monoclonal antibody raised against amino acids 1-255 representing full length U2 SnRNP A 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-393804 X, 200 µg/0.1 ml.

U2 SnRNP A (B-3) is available conjugated to agarose (sc-393804 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393804 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393804 PE), fluorescein (sc-393804 FITC), Alexa Fluor® 488 (sc-393804 AF488), Alexa Fluor® 546 (sc-393804 AF546), Alexa Fluor® 594 (sc-393804 AF594) or Alexa Fluor® 647 (sc-393804 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393804 AF680) or Alexa Fluor® 790 (sc-393804 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

U2 SnRNP A (B-3) is recommended for detection of U2 snRNP A 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).

U2 SnRNP A (B-3) is also recommended for detection of U2 snRNP A in additional species, including equine, canine, bovine and porcine.

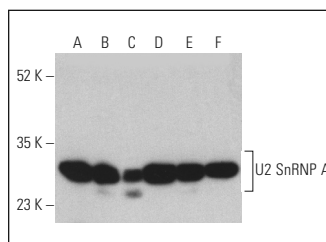
Suitable for use as control antibody for U2 snRNP A siRNA (h): sc-89928, U2 snRNP A siRNA (m): sc-154833, U2 snRNP A shRNA Plasmid (h): sc-89928-SH, U2 snRNP A shRNA Plasmid (m): sc-154833-SH, U2 snRNP A shRNA (h) Lentiviral Particles: sc-89928-V and U2 snRNP A shRNA (m) Lentiviral Particles: sc-154833-V.

U2 SnRNP A (B-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

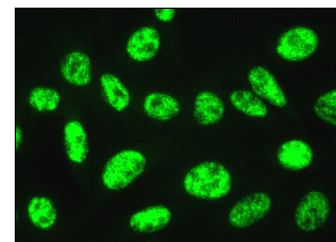
Molecular Weight of U2 SnRNP A: 28 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or MCF7 whole cell lysate: sc-2206.

DATA



U2 SnRNP A (B-3) HRP: sc-393804 HRP. Direct western blot analysis of U2 SnRNP A expression in HeLa (A), Hep G2 (B), HUVE-C (C), Jurkat (D) and MCF7 (E) whole cell lysates and HeLa nuclear extract (F).



U2 SnRNP A (B-3): sc-393804. Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Jin, L., et al. 2020. STRAP regulates alternative splicing fidelity during lineage commitment of mouse embryonic stem cells. *Nat. Commun.* 11: 5941.
2. Leader, Y., et al. 2021. The upstream 5' splice site remains associated to the transcription machinery during intron synthesis. *Nat. Commun.* 12: 4545.

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.