SANTA CRUZ BIOTECHNOLOGY, INC.

Sm B/B'/N (A-10): sc-271094

BACKGROUND

mRNA precursors are processed in the spliceosome, where introns are excised to form continuous coding sequences. The major components of the spliceosome are RNA-protein complexes called snRNPs (small nuclear ribonucleoprotein particles). The core proteins that are common to all snRNPs are called the Sm proteins, and are designated B, B', D1, D2, D3, E, F and G. Antibodies recognizing Sm proteins are frequently generated in autoimmune diseases, including in patients with systemic lupus erythematosus. Sm proteins are characterized by a conserved Sm sequence motif in two parts, Sm1 and Sm2, which are separated by a variable region.

CHROMOSOMAL LOCATION

Genetic locus: SNRPB (human) mapping to 20p13, SNRPN (human) mapping to 15q11.2; Snrpb (mouse) mapping to 2 F1, Snrpn (mouse) mapping to 7 C.

SOURCE

Sm B/B'/N (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of SmB of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sm B/B'/N (A-10) is available conjugated to agarose (sc-271094 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271094 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271094 PE), fluorescein (sc-271094 FITC), Alexa Fluor® 488 (sc-271094 AF488), Alexa Fluor® 546 (sc-271094 AF546), Alexa Fluor® 594 (sc-271094 AF594) or Alexa Fluor® 647 (sc-271094 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271094 AF680) or Alexa Fluor® 790 (sc-271094 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271094 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Sm B/B'/N (A-10) is recommended for detection of Sm B, Sm B' and Sm N 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).

Sm B/B'/N (A-10) is also recommended for detection of Sm B, Sm B' and Sm N in additional species, including equine, canine, bovine, porcine and avian.

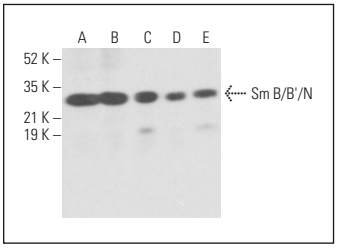
Molecular Weight of Sm B/B'/N: 28 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, HeLa nuclear extract: sc-2120 or A549 cell lysate: sc-2413.

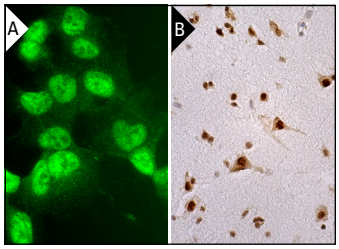
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Sm B/B'/N (A-10): sc-271094. Western blot analysis of Sm B/B'/N expression in HeLa (**A**) and K-562 (**B**) nuclear extracts and Caco-2 (**C**), A549 (**D**) and NTERA-2 cl.D1 (**E**) whole cell lysates.



Sm B/B'/N (A-10): sc-271094. Immunofluorescence staining of formalin-fixed HepG2 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing nuclear and cytoplasmic staining of neuronal and glial cells (**B**).

SELECT PRODUCT CITATIONS

1. Mahmoudi, S., et al. 2010. WRAP53 is essential for Cajal body formation and for targeting the survival of motor neuron complex to Cajal bodies. PLoS Biol. 8: e1000521.
2. Zhan, Y.T., et al. 2020. SNRPB-mediated RNA splicing drives tumor cell proliferation and stemness in hepatocellular carcinoma. Aging 13: 537-554.
3. Li, Y., et al. 2021. The Sm core components of small nuclear ribonucleoproteins promote homologous recombination repair. DNA Repair 108: 103244.
4. Wang, Y., et al. 2024. SART3 reads methylarginine-marked glycine- and arginine-rich motifs. Cell Rep. 43: 114459.

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.