SANTA CRUZ BIOTECHNOLOGY, INC.

Sm B/B'/N (H-9): sc-374078

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.

REFERENCES

1. Lerner, M.R., et al. 1979. Antibodies to small nuclear RNAs complexed with proteins are produced by patients with systemic lupus erythematosus. Proc. Natl. Acad. Sci. USA 76: 5495-5499.
2. Steitz, J.A., et al. 1988. Functions of the abundant U-snRNPs. In Birnstall, M.L., ed., Small Nuclear Ribonucleoprotein Particles: Structure and Function of Major and Minor Small Nuclear Ribonucleoprotein Particles. New York: Springer-Verlag, 115-154.
3. Luhrmann, R., et al. 1990. Structure of spliceosomal snRNPs and their role in pre-mRNA splicing. Biochim. Biophys. Acta 1087: 265-292.
4. Hermann, H., et al. 1995. snRNP Sm proteins share two evolutionarily conserved sequence motifs which are involved in Sm protein-protein interactions. EMBO J. 14: 2076-2088.
5. Seraphin, B. 1995. Sm and Sm-like proteins belong to a large family: identification of proteins of the U6 as well as the U1, U2, U4 and U5 snRNPs. EMBO J. 14: 2089-2098.

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 (H-9) is a mouse monoclonal antibody raised against amino acids 1-240 representing full length SmB 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.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

Sm B/B'/N (H-9) 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 (H-9) is also recommended for detection of Sm B, Sm B' and Sm N in additional species, including equine and canine.

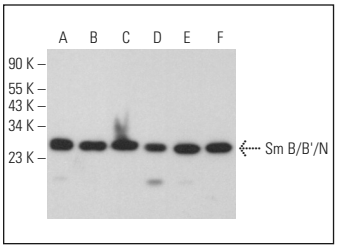
Molecular Weight of Sm B/B'/N: 28 kDa.

Positive Controls: A549 cell lysate: sc-2413, HeLa nuclear extract: sc-2120 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

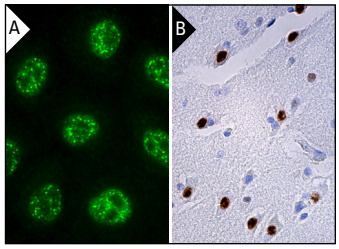
RECOMMENDED SUPPORT REAGENTS

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 (H-9): sc-374078. Western blot analysis of Sm B/B'/N expression in HeLa nuclear extract (**A**) and A549 (**B**), NTERA-2 cl.D1 (**C**), MTE1D (**D**), NIH/3T3 (**E**) and A-10 (**F**) whole cell lysates.



Sm B/B'/N (H-9): sc-374078. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing nuclear staining of neuronal cells (**B**).

SELECT PRODUCT CITATIONS

1. Hu, Y., et al. 2014. Activation-induced cytidine deaminase (AID) is localized to subnuclear domains enriched in splicing factors. Exp. Cell Res. 322: 178-192.

RESEARCH USE

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