SANTA CRUZ BIOTECHNOLOGY, INC.

Sm B/B'/N (12F5): sc-130670

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 (12F5) is a mouse monoclonal antibody raised against recombinant SmB protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sm B/B'/N (12F5) is available conjugated to agarose (sc-130670 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-130670 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130670 PE), fluorescein (sc-130670 FITC), Alexa Fluor® 488 (sc-130670 AF488), Alexa Fluor® 546 (sc-130670 AF546), Alexa Fluor® 594 (sc-130670 AF594) or Alexa Fluor® 647 (sc-130670 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130670 AF680) or Alexa Fluor® 790 (sc-130670 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Sm B/B'/N (12F5) is available conjugated to biotin (sc-130670 B), 200 µg/ml, for WB, IHC(P) and ELISA.

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

STORAGE

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

APPLICATIONS

Sm B/B'/N (12F5) is recommended for detection of Sm B, Sm B' and Sm N of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, 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).

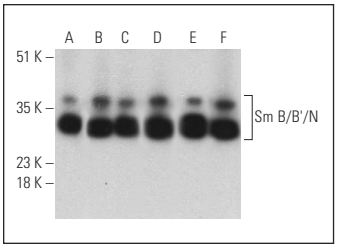
Molecular Weight of Sm B/B'/N: 28 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

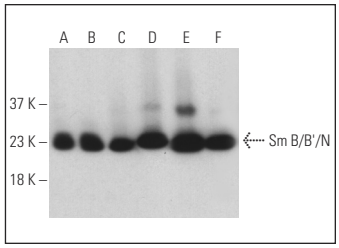
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Sm B/B'/N (12F5) HRP: sc-130670 HRP. Direct western blot analysis of Sm B/B'/N expression in HeLa (**A**), Caco-2 (**B**), A549 (**C**) and Neuro-2A (**D**) whole cell lysates and K-562 (**E**) and KNRK (**F**) nuclear extracts.



Sm B/B'/N (12F5): sc-130670. Western blot analysis of Sm B/B'/N expression in HeLa (**A**), Caco-2 (**B**), A549 (**C**) and Neuro-2A (**D**) whole cell lysates and K-562 (**E**) and KNRK (**F**) nuclear extracts. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.

SELECT PRODUCT CITATIONS

1. Xiao, R., et al. 2012. Nuclear matrix factor hnRNP U/SAF-A exerts a global control of alternative splicing by regulating U2 snRNP maturation. Mol. Cell 45: 656-668.
2. Xu, Y.F., et al. 2019. The origin of exosomal miR-1246 in human cancer cells. RNA Biol. 16: 770-784.
3. Szewczyk, M.M., et al. 2020. Pharmacological inhibition of PRMT7 links arginine monomethylation to the cellular stress response. Nat. Commun. 11: 2396.
4. Mulvaney, K.M., et al. 2021. Molecular basis for substrate recruitment to the PRMT5 methylosome. Mol. Cell 81: 3481-3495.e7.
5. Buettner, J.M., et al. 2021. Central synaptopathy is the most conserved feature of motor circuit pathology across spinal muscular atrophy mouse models. iScience 24: 103376.
6. Szewczyk, M.M., et al. 2022. PRMT5 regulates ATF4 transcript splicing and oxidative stress response. Redox Biol. 51: 102282.
7. Turner, B.R.H., et al. 2023. Non-ubiquitous expression of core spliceosomal protein SmB/B' in chick and mouse embryos. Dev. Dyn. 252: 276-293.

RESEARCH USE

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