SANTA CRUZ BIOTECHNOLOGY, INC.

Sm D1 (A-9): sc-166650

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

U1, U2, U4, U5, U6 and U7 are small nuclear ribonucleoproteins (snRNPs) that comprise the spliceosome in eukaryotes. Each UsnRNP contains common Sm proteins B/B', D1, D2, D3, E, F and G. The Sm proteins pair up as D1-D2, B/B'-D3 and E-F-G to form RNA-free hetero-oligomers in the cytoplasm. Sm proteins aid in the cytoplasmic construction of the UsnRNPs by binding to a conserved Sm site on UsnRNA and forming a stable snRNP core complex. Sm D1, D2 and D3 are present in U1, U2, U4/5 and U5 but not U7 snRNPs in human and mouse cells. U7 snRNPs contain Lsm10, an Sm D1-like protein. Autoantibodies produced in patients suffering from systemic lupus erythematosus react predominantly with Sm B/B', D1 and D3. The major linear epitope of these autoantibodies includes the C-terminal RG dipeptide repeats found in Sm D1 and D3.

CHROMOSOMAL LOCATION

Genetic locus: SNRPD1 (human) mapping to 18q11.2; Snrpd1 (mouse) mapping to 18 A1.

SOURCE

Sm D1 (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 70-100 near the C-terminus of Sm D1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sm D1 (A-9) is available conjugated to agarose (sc-166650 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166650 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-166650 PE), fluorescein (sc-166650 FITC), Alexa Fluor® 488 (sc-166650 AF488) or Alexa Fluor® 647 (sc-166650 AF647), 200 µg/ml, for IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-166650 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Sm D1 (A-9) is recommended for detection of Sm D1 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 D1 (A-9) is also recommended for detection of Sm D1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Sm D1 siRNA (h): sc-38325, Sm D1 siRNA (m): sc-38326, Sm D1 shRNA Plasmid (h): sc-38325-SH, Sm D1 shRNA Plasmid (m): sc-38326-SH, Sm D1 shRNA (h) Lentiviral Particles: sc-38325-V and Sm D1 shRNA (m) Lentiviral Particles: sc-38326-V.

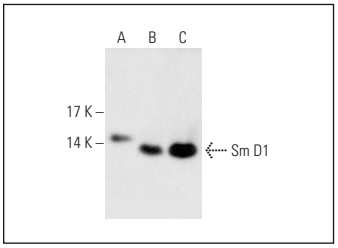
Molecular Weight of Sm D1: 13 kDa.

Positive Controls: Ramos nuclear extract: sc-2153.

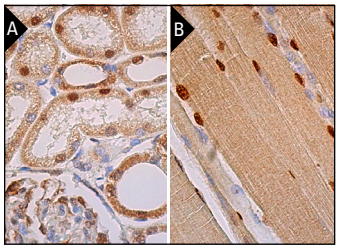
RECOMMENDED SUPPORT REAGENTS

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 D1 (A-9): sc-166650. Western blot analysis of Sm D1 expression in K-562 whole cell lysate (**A**) and HeLa (**B**) and Ramos (**C**) nuclear extracts.



Sm D1 (A-9): sc-166650. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and nuclear and cytoplasmic staining of cells of tubules (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing nuclear and cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Fong, K.W., et al. 2013. Whole-genome screening identifies proteins localized to distinct nuclear bodies. J. Cell Biol. 203: 149-164.
2. Li, Y., et al. 2021. The Sm core components of small nuclear ribonucleoproteins promote homologous recombination repair. DNA Repair 108: 103244.
3. Wang, Y., et al. 2022. Pan-methylarginine antibody generation using PEG linked GAR motifs as antigens. Methods 200: 80-86.

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.