



Sm D3 (N-18): sc-20826

BACKGROUND

U1, U2, U5 and U4/U6 are small nuclear ribonucleo-proteins (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, with respective molecular weights of 16, 16.5 and 18 kDa, are present in U1, U2, U4/5 and U5 but not U7 snRNPs in human and mouse cells. U7 snRNPs contain Lsm10, a Sm D1-like protein with a molecular weight of 14 kDa. 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.

REFERENCES

1. Branlant, C., et al. 1982. U2 RNA shares a structural domain with U1, U4, and U5 RNAs. *EMBO J.* 1: 1259-1265.
2. Lehmeier, T., et al. 1990. Evidence for three distinct D proteins, which react differentially with anti-Sm autoantibodies, in the cores of the major snRNPs U1, U2, U4/U6 and U5. *Nucleic Acids Res.* 18: 6475-6484.
3. Raker, V.A., et al. 1996. The snRNP core assembly pathway: identification of stable core protein heteromeric complexes and an snRNP subcore particle *in vitro*. *EMBO J.* 15: 2256-2269.
4. Brahms, H., et al. 2000. The C-terminal RG dipeptide repeats of the spliceosomal Sm proteins D1 and D3 contain symmetrical dimethylarginines, which form a major B cell epitope for anti-Sm autoantibodies. *J. Biol. Chem.* 275: 17122-17129.
5. Pillai, R.S., et al. 2001. Purified U7 snRNPs lack the Sm proteins D1 and D2 but contain Lsm10, a new 14 kDa Sm D1-like protein. *EMBO J.* 20: 5470-5479.
6. LocusLink Report (LocusID: 6632). <http://www.ncbi.nlm.nih.gov/LocusLink/>
7. LocusLink Report (LocusID: 6633). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: SNRPD3 (human) mapping to 22q11.23; Snrpd3 (mouse) mapping to 10.

SOURCE

Sm D3 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Sm D3 of human origin.

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.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20826 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sm D3 (N-18) is recommended for detection of Sm D3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

PROTOCOLS

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