

Sm D1 (h): 293T Lysate: sc-111571

BACKGROUND

U1, U2, U4, U5, U6 and U7 are small nuclear ribonucleoproteins (snRNPs) that comprise the spliceosome in eukaryotes. Each snRNP 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 snRNPs by binding to a conserved Sm site on snRNA 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.

REFERENCES

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2. Lehmeier, T., Foulaki, K. and Luhrmann, R. 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., Plessel, G. and Luhrmann, R. 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., Raymackers, J., Union, A., Keyser, F., Meheus, L. and Luhrmann, R. 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., Will, C.L., Luhrmann, R., Schumperli, D. and Muller, B. 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/>

CHROMOSOMAL LOCATION

Genetic locus: SNRPD1 (human) mapping to 18q11.2.

PRODUCT

Sm D1 (h): 293T Lysate represents a lysate of human Sm D1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

Sm D1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Sm D1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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