

Sm G (K-15): sc-101150

BACKGROUND

U1, U2, U5 and U4/U6 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 F (also known as SNRPF for small nuclear ribonucleoprotein polypeptide F) and Sm G (also known as SNRPG) are both expressed as 0.5 kb transcripts in HeLa cells. The genes encoding human Sm F and Sm G map to chromosomes 12 and 2p13.3, respectively. Sm proteins are often targeted by autoantibodies produced in patients suffering from systemic lupus erythematosus (SLE). One class of these autoantibodies react specifically with native Sm E-F-G complexes.

REFERENCES

1. Branlant, C., Krol, A., Ebel, J.P., Lazar, E., Haendler, B. and Jacob, M. 1982. U2 RNA shares a structural domain with U1, U4, and U5 RNAs. *EMBO J.* 1: 1259-1265.
2. Hermann, H., Fabrizio, P., Raker, V.A., Foulaki, K., Hornig, H., Brahms, H. and Luhrmann, R. 1995. snRNP Sm proteins share two evolutionarily conserved sequence motifs which are involved in Sm protein-protein interactions. *EMBO J.* 14: 2076-2088.
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., Raker, V.A., van Venrooij, W.J. and Luhrmann, R. 1997. A major, novel systemic lupus erythematosus autoantibody class recognizes the E, F, and G Sm snRNP proteins as an E-F-G complex but not in their denatured states. *Arthritis Rheum.* 40: 672-682.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603541: World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: SNRPG (human) mapping to 2p13.3; Snrpg (mouse) mapping to 6 D1.

SOURCE

Sm G (K-15) is a mouse monoclonal antibody raised against recombinant Sm G of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ 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.

APPLICATIONS

Sm G (K-15) is recommended for detection of Sm G of mouse, rat and human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Sm G siRNA (h): sc-106555, Sm G siRNA (m): sc-153613, Sm G shRNA Plasmid (h): sc-106555-SH, Sm G shRNA Plasmid (m): sc-153613-SH, Sm G shRNA (h) Lentiviral Particles: sc-106555-V and Sm G shRNA (m) Lentiviral Particles: sc-153613-V.

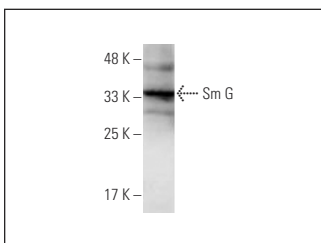
Molecular Weight of Sm G: 9 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

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).

DATA



Sm G (K-15): sc-101150. Western blot analysis of Sm G expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

1. Ganaie, S.S., Zou, W., Xu, P., Deng, X., Kleiboeker, S. and Qiu, J. 2017. Phosphorylated STAT5 directly facilitates parvovirus B19 DNA replication in human erythroid progenitors through interaction with the MCM complex. *PLoS Pathog.* 13: e1006370.

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.