

SMN (F-5): sc-365909



The Power to Question

BACKGROUND

Spinal muscular atrophy (SMA) is an autosomal recessive neurodegenerative disease characterized by loss of motor neurons in the spinal cord. SMA is caused by deletion or loss-of-function mutations of SMN (survival of motor neuron) gene. SMN, also known as Gemin1, SMN1, SMNT and BCD541, exists as four isoforms produced by alternative splicing. SMN is oligomeric and forms a complex with Gemin2 (formerly SIP1), Gemin3 (a DEAD box RNA helicase), Gemin4, Gemin5 and Gemin6, as well as several spliceosomal snRNP proteins. The SMN complex plays an essential role in spliceosomal snRNP assembly in the cytoplasm and is required for pre-mRNA splicing of the nucleus. The SMN complex is found in both the cytoplasm and the nucleus. The nuclear form is concentrated in subnuclear bodies called gems (gemini of the coiled bodies). Cytoplasmic SMN interacts with spliceosomal Sm proteins and facilitates their assembly onto U snRNAs, and nuclear SMN mediates recycling of pre-mRNA splicing factors. Nearly identical telomeric and centromeric forms of SMN encode the same protein; however, only mutations in the telomeric form are associated with the disease-state SMA. SMN is expressed in a wide variety of tissues including brain, kidney, liver, spinal cord and moderately in skeletal and cardiac muscle.

CHROMOSOMAL LOCATION

Genetic locus: SMN1/SMN2 (human) mapping to 5q13.2; Smn1 (mouse) mapping to 13 D1.

SOURCE

SMN (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 11-41 near the N-terminus of SMN of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365909 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SMN (F-5) is recommended for detection of SMN 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SMN siRNA (h): sc-36510, SMN siRNA (m): sc-36511, SMN shRNA Plasmid (h): sc-36510-SH, SMN shRNA Plasmid (m): sc-36511-SH, SMN shRNA (h) Lentiviral Particles: sc-36510-V and SMN shRNA (m) Lentiviral Particles: sc-36511-V.

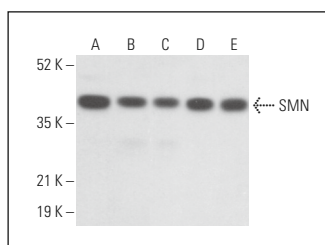
Molecular Weight of SMN: 39 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Hep G2 cell lysate: sc-2227 or 3T3-L1 cell lysate: sc-2243.

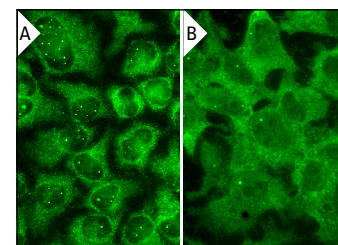
RECOMMENDED SUPPORT REAGENTS

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



SMN (F-5): sc-365909. Western blot analysis of SMN expression in Hep G2 (A), SUP-T1 (B), Jurkat (C), HeLa (D) and 3T3-L1 (E) whole cell lysates.



SMN (F-5): sc-365909. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and cajal bodies localization (A). Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Morelli, F.F., et al. 2017. Aberrant compartment formation by HSPB2 mislocalizes Lamin A and compromises nuclear integrity and function. *Cell Rep.* 20: 2100-2115.
- Barnes, J. and Wilson, D.W. 2020. The ESCRT-II subunit EAP20/VPS25 and the Bro1 domain proteins HD-PTP and BROX are individually dispensable for HSV-1 replication. *J. Virol.* 94: e01641-19.
- Iannucci, L.F., et al. 2023. Cyclic AMP induces reversible EPAC1 condensates that regulate histone transcription. *Nat. Commun.* 14: 5521.

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.



See **SMN (2B1): sc-32313** for SMN antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488, 546, 594, 647, 680 and 790.