SANTA CRUZ BIOTECHNOLOGY, INC.

Spastin (Sp 6C6): sc-81624

BACKGROUND

The AAA protein family members share an ATPase domain and have roles in various cellular processes including intracellular motility, membrane trafficking, proteolysis, protein folding and organelle biogenesis. Spastin, a member of the AAA protein family, is a 616 amino acid protein and is involved in the function or assembly of nuclear protein complexes. The Spastin protein is expressed ubiquitously and localizes to the nucleus and the cytoplasm, where it may also be involved in microtubule dynamics. Mutations in the Spastin gene (SPAST, SPG4) cause the most common form of spastic paraplegia 4, an autosomal dominant form of hereditary spastic paraplegia (HSP). HSPs comprise a group of inherited neurological disorders characterized by spastic lower extremity weakness due to a length-dependent, retrograde axonopathy of corticospinal motor neurons. SPAST-specific mutations account for approximately 40% of all autosomal dominant HSPs.

REFERENCES

1. Nielsen, J.E., et al. 2004. Hereditary spastic paraplegia with cerebellar ataxia: a complex phenotype associated with a new SPG4 gene mutation. Eur. J. Neurol. 11: 817-824.
2. Scheuer, K.H., et al. 2005. Reduced regional cerebral blood flow in SPG4-linked hereditary spastic paraplegia. J. Neurol. Sci. 235: 23-32.

CHROMOSOMAL LOCATION

Genetic locus: SPAST (human) mapping to 2p22.3; Spast (mouse) mapping to 17 E2.

SOURCE

Spastin (Sp 6C6) is a mouse monoclonal antibody raised against recombinant Spastin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Spastin (Sp 6C6) is recommended for detection of Spastin 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Spastin siRNA (h): sc-61603, Spastin siRNA (m): sc-61604, Spastin shRNA Plasmid (h): sc-61603-SH, Spastin shRNA Plasmid (m): sc-61604-SH, Spastin shRNA (h) Lentiviral Particles: sc-61603-V and Spastin shRNA (m) Lentiviral Particles: sc-61604-V.

Molecular Weight of Spastin long isoform: 64-68 kDa.

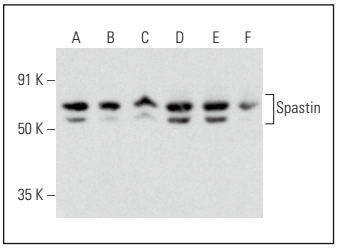
Molecular Weight of Spastin short isoform: 55-60 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, PC-3 cell lysate: sc-2220 or NIH/3T3 whole cell lysate: sc-2210.

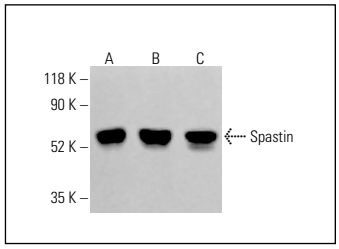
RECOMMENDED SUPPORT REAGENTS

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



Spastin (Sp 6C6): sc-81624. Western blot analysis of Spastin expression in PC-3 (**A**), MCF7 (**B**), NIH/3T3 (**C**), RAW 264.7 (**D**), KNRK (**E**) and C6 (**F**) whole cell lysates.



Spastin (Sp 6C6): sc-81624. Western blot analysis of Spastin expression in HeLa (**A**), K-562 (**B**) and HCT-116 (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Dráberová, E., et al. 2011. Microtubule-severing ATPase Spastin in glioblastoma: increased expression in human glioblastoma cell lines and inverse roles in cell motility and proliferation. J. Neuropathol. Exp. Neurol. 70: 811-826.
2. Leo, L., et al. 2017. Mutant Spastin proteins promote deficits in axonal transport through an isoform-specific mechanism involving casein kinase 2 activation. Hum. Mol. Genet. 26: 2321-2334.
3. Sardina, F., et al. 2020. Spastin recovery in hereditary spastic paraplegia by preventing neddylation-dependent degradation. Life Sci. Alliance 3: e202000799.
4. Eira, J., et al. 2021. Transthyretin promotes axon growth via regulation of microtubule dynamics and tubulin acetylation. Front. Cell Dev. Biol. 9: 747699.

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.