SANTA CRUZ BIOTECHNOLOGY, INC.

Atlastin (M-17): sc-49158

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Atlastins are Golgi-localized, integral membrane proteins that function as GTPases. The Atlastin proteins, also designated SPG3A and guanylate-binding protein 3, comprise a Dynamin superfamily that plays a role in axonal maintenance. Hereditary spastic paraplegia (HSP) is an inherited neurodegenerative disorder that is characterized by retrograde axonal degeneration. HSP primarily affects long corticospinal neurons and causes spastic lower extremity weakness. Spastin, a microtubule (MT)-severing AAA ATPase, is a binding partner of Atlastin that is involved in membrane dynamics. This Spastin/Atlastin binding may be involved in the biochemical pathway that leads to HSP development. Mutations in the Atlastin gene (SPG3A) account for approximately 10% of all autosomal dominant HSPs, while mutations in the Spastin gene (SPG4) account for almost 40%.

REFERENCES

1. Zhu, P.P., et al. 2003. Cellular localization, oligomerization and membrane association of the hereditary spastic paraplegia 3A (SPG3A) protein Atlastin. J. Biol. Chem. 278: 49063-49071.
2. Elliott, J.L. 2004. Beginning to understand hereditary spastic paraplegia Atlastin. Arch. Neurol. 61: 1842-1843.
3. Dürr, A., et al. 2004. Atlastin1 mutations are frequent in young-onset autosomal dominant spastic paraplegia. Arch. Neurol. 61: 1867-1872.
4. Abel, A., et al. 2004. Early onset autosomal dominant spastic paraplegia caused by novel mutations in SPG3A. Neurogenetics 5: 239-243.
5. Hedera, P., et al. 2005. Spinal cord magnetic resonance imaging in autosomal dominant hereditary spastic paraplegia. Neuroradiology 47: 730-734.
6. Park, S.Y., et al. 2005. Mutation analysis of SPG4 and SPG3A genes and its implication in molecular diagnosis of Korean patients with hereditary spastic paraplegia. Arch. Neurol. 62: 1118-1121.

CHROMOSOMAL LOCATION

Genetic locus: SPG3A (human) mapping to 14q22.1; Spg3a (mouse) mapping to 12 C2.

SOURCE

Atlastin (M-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Atlastin of mouse origin.

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-49158 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Atlastin (M-17) is recommended for detection of Atlastin of mouse, rat and, to a lesser extent, 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)], 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).

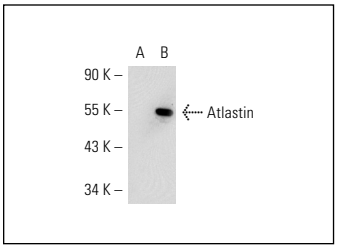
Suitable for use as control antibody for Atlastin siRNA (h): sc-60225, Atlastin siRNA (m): sc-60226, Atlastin shRNA Plasmid (h): sc-60225-SH, Atlastin shRNA Plasmid (m): sc-60226-SH, Atlastin shRNA (h) Lentiviral Particles: sc-60225-V and Atlastin shRNA (m) Lentiviral Particles: sc-60226-V.

Molecular Weight of Atlastin: 64 kDa.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Atlastin (M-17): sc-49158. Western blot analysis of Atlastin expression in non-transfected: sc-110760 (**A**) and human Atlastin transfected: sc-111145 (**B**) 293 whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

MONOS Satisfaction Guaranteed

Try **Atlastin (B-12): sc-374175** or **Atlastin (E-9): sc-376619**, our highly recommended monoclonal alternatives to Atlastin (M-17).