SANTA CRUZ BIOTECHNOLOGY, INC.

Atlastin (B-12): sc-374175

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. Scarano, V., et al. 2005. The R495W mutation in SPG3A causes spastic paraplegia associated with axonal neuropathy. J. Neurol. 252: 901-903.

CHROMOSOMAL LOCATION

Genetic locus: ATL1 (human) mapping to 14q22.1.

SOURCE

Atlastin (B-12) is a mouse monoclonal antibody raised against amino acids 514-550 mapping at the C-terminus of Atlastin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Atlastin (B-12) is available conjugated to agarose (sc-374175 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374175 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374175 PE), fluorescein (sc-374175 FITC), Alexa Fluor® 488 (sc-374175 AF488), Alexa Fluor® 546 (sc-374175 AF546), Alexa Fluor® 594 (sc-374175 AF594) or Alexa Fluor® 647 (sc-374175 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374175 AF680) or Alexa Fluor® 790 (sc-374175 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Atlastin (B-12) is recommended for detection of Atlastin of 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 Atlastin siRNA (h): sc-60225, Atlastin shRNA Plasmid (h): sc-60225-SH and Atlastin shRNA (h) Lentiviral Particles: sc-60225-V.

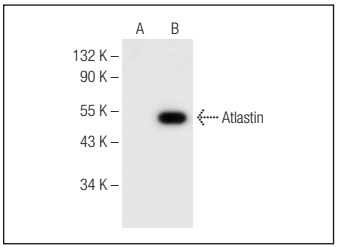
Molecular Weight of Atlastin: 64 kDa.

Positive Controls: Atlastin (h): 293 Lysate: sc-111145, human hippocampus brain extract: sc-364375 or IMR-32 cell lysate: sc-2409.

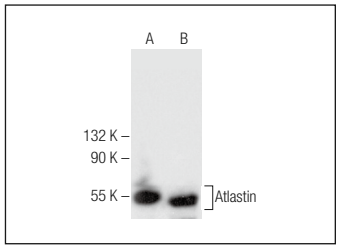
RECOMMENDED SUPPORT REAGENTS

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



Atlastin (B-12): sc-374175. Western blot analysis of Atlastin expression in non-transfected: sc-110760 (**A**) and human Atlastin transfected: sc-111145 (**B**) 293 whole cell lysates.



Atlastin (B-12): sc-374175. Western blot analysis of Atlastin expression in human hippocampus tissue extract (**A**) and IMR-32 whole cell lysate (**B**).

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.