SANTA CRUZ BIOTECHNOLOGY, INC.

Atlastin (C-16): sc-49157

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.
7. 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.
8. Evans, K., et al. 2006. Interaction of two hereditary spastic paraplegia gene products, Spastin and Atlastin, suggests a common pathway for axonal maintenance. Proc. Natl. Acad. Sci. USA 103: 10666-10671.

CHROMOSOMAL LOCATION

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

SOURCE

Atlastin (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Atlastin of human 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-49157 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Atlastin (C-16) is recommended for detection of Atlastin of human and, to a lesser extent, mouse and rat 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).

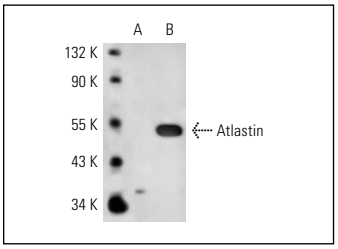
Atlastin (C-16) is also recommended for detection of Atlastin in additional species, including equine, canine, bovine and porcine.

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.

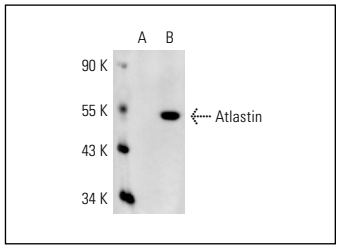
Molecular Weight of Atlastin: 64 kDa.

Positive Controls: Atlastin (h): 293 Lysate: sc-111145 or human platelet whole cell lysate: sc-363773.

DATA



Atlastin (C-16): sc-49157. Western blot analysis of Atlastin expression in non-transfected: sc-110760 (**A**) and human Atlastin transfected: sc-111145 (**B**) 293 whole cell lysates.



Atlastin (C-16): sc-49157. 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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.