SANTA CRUZ BIOTECHNOLOGY, INC.

AGTPBP1 (LM-1A7): sc-134251

BACKGROUND

AGTPBP1 (ATP/GTP-binding protein 1), also known as CCP1 (cytosolic carboxypeptidase 1), KIAA1035 or NNA1, is a 1,226 amino acid protein that belongs to the peptidase M14 family. AGTPBP1 contains an ATP/GTP-binding motif of the P-loop type, a leucine zipper, a nuclear localization signal, a zinc carboxypeptidase signature and a nucleotide-binding site. Expressed at high levels in testis, heart and dorsal root ganglia and at lower levels in skeletal muscle and kidney, AGTPBP1 may be responsible for Purkinje cell degeneration (pcd). The loss of AGTPBP1 in Purkinje cells leads directly to their degeneration and a functional carboxypeptidase domain is crucial for AGTPBP1 to support neuron survival. Two isoforms exists due to alternative splicing events.

REFERENCES

1. Harris, A., et al. 2000. Regenerating motor neurons express Nna1, a novel ATP/GTP-binding protein related to zinc carboxypeptidases. Mol. Cell. Neurosci. 16: 578-596.
2. Fernandez-Gonzalez, A., et al. 2002. Purkinje cell degeneration (pcd) phenotypes caused by mutations in the axotomy-induced gene, Nna1. Science 295: 1904-1906.
3. Delis, F., et al. 2004. Dopamine receptor and transporter levels are altered in the brain of Purkinje cell degeneration mutant mice. Neuroscience 125: 255-268.
4. Chakrabarti, L., et al. 2006. The Purkinje cell degeneration 5J mutation is a single amino acid insertion that destabilizes Nna1 protein. Mamm. Genome 17: 103-110.
5. Wang, T., et al. 2006. The carboxypeptidase-like substrate-binding site in Nna1 is essential for the rescue of the Purkinje cell degeneration (pcd) phenotype. Mol. Cell. Neurosci. 33: 200-213.
6. Lalonde, R. and Strazielle, C. 2007. Spontaneous and induced mouse mutations with cerebellar dysfunctions: behavior and neurochemistry. Brain Res. 1140: 51-74.
7. Rodriguez de la Vega, M., et al. 2007. Nna1-like proteins are active metallocarboxypeptidases of a new and diverse M14 subfamily. FASEB J. 21: 851-865.
8. Chakrabarti, L., et al. 2008. The zinc-binding domain of Nna1 is required to prevent retinal photoreceptor loss and cerebellar ataxia in Purkinje cell degeneration (pcd) mice. Vision Res. 48: 1999-2005.

CHROMOSOMAL LOCATION

Genetic locus: AGTPBP1 (human) mapping to 9q21.33.

SOURCE

AGTPBP1 (LM-1A7) is a mouse monoclonal antibody raised against recombinant AGTPBP1 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AGTPBP1 (LM-1A7) is recommended for detection of AGTPBP1 of 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AGTPBP1 siRNA (h): sc-92665, AGTPBP1 shRNA Plasmid (h): sc-92665-SH and AGTPBP1 shRNA (h) Lentiviral Particles: sc-92665-V.

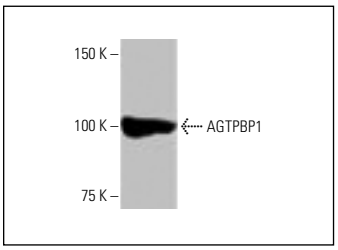
Molecular Weight of AGTPBP1: 130 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or K-562 whole cell lysate: sc-2203.

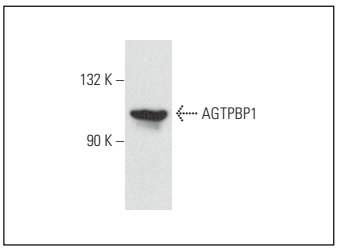
RECOMMENDED SUPPORT REAGENTS

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).

DATA



AGTPBP1 (LM-1A7): sc-134251. Western blot analysis of AGTPBP1 expression in Hep G2 whole cell lysate.



AGTPBP1 (LM-1A7): sc-134251. Western blot analysis of AGTPBP1 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Xia, P., et al. 2016. Glutamylation of the DNA sensor cGAS regulates its binding and synthase activity in antiviral immunity. Nat. Immunol. 17: 369-378.
2. Liu, B., et al. 2017. IL-7Rα glutamylation and activation of transcription factor Sall3 promote group 3 ILC development. Nat. Commun. 8: 231.
3. Ferreira, L.T., et al. 2018. Dissecting the role of the Tubulin code in mitosis. Methods Cell Biol. 144: 33-74.

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.