SANTA CRUZ BIOTECHNOLOGY, INC.

Amphiphysin I (D-6): sc-390282

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The Power to Question

BACKGROUND

Amphiphysin is a brain-enriched protein that exhibits N-terminal lipid interaction and functions as a dimer. Amphiphysin contains a membrane bending BAR domain, a middle Clathrin and adaptor binding domain, and a C-terminal SH3 domain. In the brain, Amphiphysin I and II form heterodimers that bind to the Clathrin associated GTPase Dynamin via their SH3 domains. This association is essential for synaptic vesicle recycling in neurons, as it precedes the binding of Dynamin to the Clathrin-coated pits and the subsequent vesicle budding. In other tissues, Amphiphysin may play a key role in other membrane bending and curvature stabilization events. The mammalian Amphiphysins, Amphiphysin I and Amphiphysin II, have similar overall structure. A ubiquitous splice form of Amphiphysin II that does not contain Clathrin or adaptor interactions is highly expressed in muscle tissue and is involved in the formation and stabilization of the T tubule network.

REFERENCES

1. Lichte, B., et al. 1992. Amphiphysin, a novel protein associated with synaptic vesicles. EMBO J. 11: 2521-2530.
2. Yamamoto, R., et al. 1995. Primary structure of human amphiphysin, the dominant autoantigen of paraneoplastic stiff-man syndrome, and mapping of its gene (AMPH) to chromosome 7p13-p14. Hum. Mol. Genet. 4: 265-268.
3. Sakamuro, D., et al. 1996. BIN1 is a novel MYC-interacting protein with features of a tumour suppressor. Nat. Genet. 14: 69-77.
4. Leprince, C., et al. 1997. A new member of the amphiphysin family connecting endocytosis and signal transduction pathways. J. Biol. Chem. 272: 15101-15105.
5. Wigge, P., et al. 1997. Amphiphysin heterodimers: potential role in clathrin-mediated endocytosis. Mol. Biol. Cell 8: 2003-2015.
6. Wechsler-Reya, R., et al. 1997. Structural analysis of the human BIN1 gene. Evidence for tissue-specific transcriptional regulation and alternate RNA splicing. J. Biol. Chem. 272: 31453-31458.
7. Wechsler-Reya, R., et al. 1997. The putative tumor suppressor BIN1 is a short-lived nuclear phosphoprotein, the localization of which is altered in malignant cells. Cancer Res. 57: 3258-3263.

CHROMOSOMAL LOCATION

Genetic locus: AMPH (human) mapping to 7p14.1.

SOURCE

Amphiphysin I (D-6) is a mouse monoclonal antibody raised against amino acids 467-620 of amphiphysin I 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.

STORAGE

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

APPLICATIONS

Amphiphysin I (D-6) is recommended for detection of Amphiphysin I 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 Amphiphysin I siRNA (h): sc-29671, Amphiphysin I shRNA Plasmid (h): sc-29671-SH and Amphiphysin I shRNA (h) Lentiviral Particles: sc-29671-V.

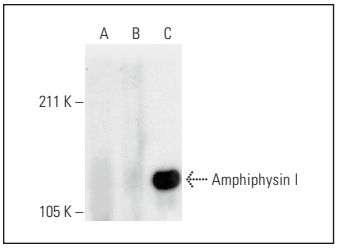
Molecular Weight of Amphiphysin I: 128 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or human brain hippocampus extract: sc-364375.

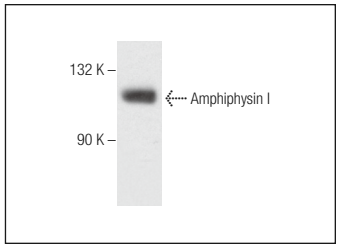
RECOMMENDED SUPPORT REAGENTS

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



Amphiphysin I (D-6): sc-390282. Western blot analysis of Amphiphysin I expression in mouse brain (**A**), rat brain (**B**) and human hippocampus (**C**) tissue extracts. Note lack of reactivity with mouse and rat Amphiphysin I in lanes **A** and **B**.



Amphiphysin I (D-6): sc-390282. Western blot analysis of Amphiphysin I expression in IMR-32 whole cell lysate.

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.