SANTA CRUZ BIOTECHNOLOGY, INC.

Amphiphysin I (8): sc-21710

SANTA CRUZ BIOTECHNOLOGY

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. An 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.

CHROMOSOMAL LOCATION

Genetic locus: AMPH (human) mapping to 7p14.1; Amph (mouse) mapping to 13 A2.

SOURCE

Amphiphysin I (8) is a mouse monoclonal antibody raised against an epitope mapping at the N-terminus of Amphiphysin I of human orgin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Amphiphysin I (8) is recommended for detection of Amphiphysin I of mouse, rat and 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Amphiphysin I siRNA (h): sc-29671, Amphiphysin I siRNA (m): sc-29672, Amphiphysin I shRNA Plasmid (h): sc-29671-SH, Amphiphysin I shRNA Plasmid (m): sc-29672-SH, Amphiphysin I shRNA (h) Lentiviral Particles: sc-29671-V and Amphiphysin I shRNA (m) Lentiviral Particles: sc-29672-V.

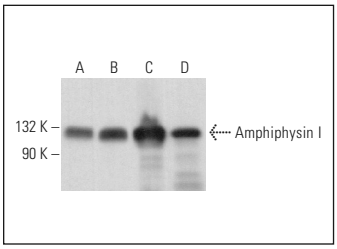
Molecular Weight of Amphiphysin I: 128 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, PC-12 cell lysate: sc-2250 or rat brain extract: sc-2392.

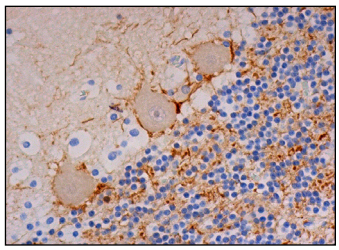
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Amphiphysin I (8): sc-21710. Western blot analysis of Amphiphysin I expression in SH-SY5Y (**A**) and PC-12 (**B**) whole cell lysates and rat brain (**C**) and human cerebellum (**D**) tissue extracts.



Amphiphysin I (8): sc-21710. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing neuropil staining and membrane staining of Purkinje cells.

SELECT PRODUCT CITATIONS

1. Craft, G.E., et al. 2008. The *in vivo* phosphorylation sites in multiple isoforms of Amphiphysin I from rat brain nerve terminals. Mol. Cell. Proteomics 7: 1146-1161.
2. Andrew, R.J., et al. 2019. Reduction of the expression of the late-onset Alzheimer's disease (AD) risk-factor BIN1 does not affect amyloid pathology in an AD mouse model. J. Biol. Chem. 294: 4477-4487.
3. De Rossi, P., et al. 2020. Neuronal BIN1 regulates presynaptic neurotransmitter release and memory consolidation. Cell Rep. 30: 3520-3535.e7.
4. Zou, L., et al. 2021. Asparagine endopeptidase cleaves synaptojanin 1 and triggers synaptic dysfunction in Parkinson's disease. Neurobiol. Dis. 154: 105326.
5. Zhang, X., et al. 2021. Amphiphysin I cleavage by asparagine endopeptidase leads to Tau hyperphosphorylation and synaptic dysfunction. Elife 10: e65301.

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.