# Amphiphysin I (8): sc-21710

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## BACKGROUND

Amphiphysin is a brain-enriched protein that exhibits N-terminal lipid inter-action 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 asso-ciation 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 ubiqui-tous 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) Immunopre-cipitation: 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) Immuno-histochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA
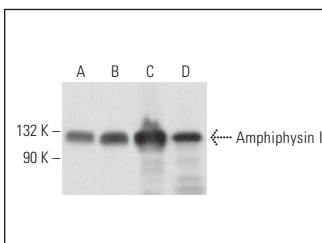


Amphiphysin I (8): sc-21710. Western blot analysis of Amphiphysin I expression in SH-SY5Y (**A**) and PC-12 (**B**) whole cell lysates and rat brain (**C**) and human cerebellum (**D**) tissue extracts.
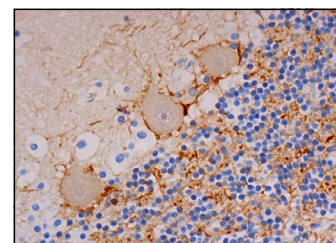
Amphiphysin I (8): sc-21710. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing neuropil staining and membrane staining of Purkinje cells.

## 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 neurotrans-mitter 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 endo-peptidase 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.