SANTA CRUZ BIOTECHNOLOGY, INC.

Amphiphysin II (99D): sc-13575

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: BIN1 (human) mapping to 2q14.3; Bin1 (mouse) mapping to 18 B1.

SOURCE

Amphiphysin II (99D) is a mouse monoclonal antibody derived from exon 13 of Amphiphysin II of human origin.

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 II (99D) is recommended for detection of Amphiphysin II splice variants 1-10 of moues, rat, human and avian 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 II siRNA (h): sc-29804, Amphiphysin II siRNA (m): sc-29805, Amphiphysin II shRNA Plasmid (h): sc-29804-SH, Amphiphysin II shRNA Plasmid (m): sc-29805-SH, Amphiphysin II shRNA (h) Lentiviral Particles: sc-29804-V and Amphiphysin II shRNA (m) Lentiviral Particles: sc-29805-V.

Molecular Weight of Amphiphysin II: 90 kDa.

Molecular Weight of Amphiphysin II BIN1 splice variant: 70 kDa.

Positive Controls: Amphiphysin II (h2): 293T Lysate: sc-176827, human skeletal muscle extract: sc-363776 or HeLa whole cell lysate: sc-2200.

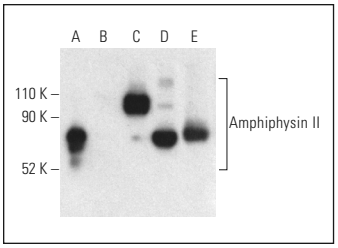
STORAGE

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

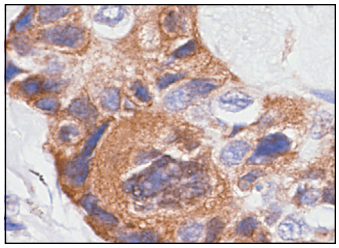
RESEARCH USE

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

DATA



Amphiphysin II (99D): sc-13575. Western blot analysis of human recombinant Amphiphysin II (**A**) and Amphiphysin II expression in non-transfected 293T: sc-117752 (**B**), human Amphiphysin II transfected 293T: sc-127962 (**C**) and human Amphiphysin II transfected 293T: sc-176827 (**D**) whole cell lysates and human skeletal muscle tissue extract (**E**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Amphyphysin II (99D): sc-13575. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung tumor showing nuclear and cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Kinney, E.L., et al. 2008. Adenovirus E1A oncoprotein liberates c-Myc activity to promote cell proliferation through abating BIN1 expression via an Rb/E2F-1-dependent mechanism. J. Cell. Physiol. 216: 621-631.
2. Lundgaard, G.L., et al. 2011. Identification of a novel effector domain of BIN1 for cancer suppression. J. Cell. Biochem. 112: 2992-3001.
3. Hofhuis, J., et al. 2017. Dysferlin mediates membrane tubulation and links T-tubule biogenesis to muscular dystrophy. J. Cell Sci. 130: 841-852.
4. McAvoy, K.M., et al. 2019. Cell-autonomous and non-cell autonomous effects of neuronal BIN1 loss *in vivo*. PLoS ONE 14: e0220125.
5. Voskobiynyk, Y., et al. 2020. Alzheimer's disease risk gene BIN1 induces Tau-dependent network hyperexcitability. Elife 9: e57354.
6. Taga, M., et al. 2020. BIN1 protein isoforms are differentially expressed in astrocytes, neurons, and microglia: neuronal and astrocyte BIN1 are implicated in Tau pathology. Mol. Neurodegener. 15: 44.
7. Fonseca-Ornelas, L., et al. 2021. Altered conformation of α-synuclein drives dysfunction of synaptic vesicles in a synaptosomal model of Parkinson's disease. Cell Rep. 36: 109333.
8. Latina, V., et al. 2023. The cleavage-specific Tau 12A12mAb exerts an anti-amyloidogenic action by modulating the endocytic and bioenergetic pathways in Alzheimer's disease mouse model. Int. J. Mol. Sci. 24: 9683.
9. Westhoff, M., et al. 2024. BIN1 knockdown rescues systolic dysfunction in aging male mouse hearts. Nat. Commun. 15: 3528.

CONJUGATES

See **Amphiphysin II (2F11): sc-23918** for Amphiphysin II antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.