

# Amphiphysin II (2F11): sc-23918

## 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

- Lichte, B., et al. 1992. Amphiphysin, a novel protein associated with synaptic vesicles. *EMBO J.* 11: 2521-2530.
- 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.
- Sakamuro, D., et al. 1996. BIN1 is a novel Myc-interacting protein with features of a tumour suppressor. *Nat. Genet.* 14: 69-77.

## CHROMOSOMAL LOCATION

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

## SOURCE

Amphiphysin II (2F11) is a mouse monoclonal antibody raised against a chimeric protein corresponding to Amphiphysin II BAR domain with an epitope mapping to amino acids 179-207 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Amphiphysin II (2F11) is available conjugated to agarose (sc-23918 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23918 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23918 PE), fluorescein (sc-23918 FITC), Alexa Fluor<sup>®</sup> 488 (sc-23918 AF488), Alexa Fluor<sup>®</sup> 546 (sc-23918 AF546), Alexa Fluor<sup>®</sup> 594 (sc-23918 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-23918 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-23918 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-23918 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## APPLICATIONS

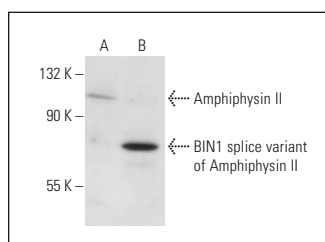
Amphiphysin II (2F11) is recommended for detection of all Amphiphysin II isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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 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.

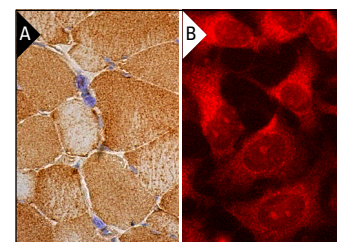
Molecular Weight of Amphiphysin II: 90 kDa.

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

## DATA



BIN1 (2F11): sc-23918. Western blot analysis of BIN1 and Amphiphysin II expression in IMR-32 (A) and HeLa (B) whole cell lysates.



Amphiphysin II (2F11): sc-23918. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat skeletal muscle tissue showing cytoplasmic staining of myocytes (A). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (B).

## SELECT PRODUCT CITATIONS

- Cassimere, E.K., et al. 2009. The c-Myc suppressor BIN1 is a transcriptional target for E2F1 in response to DNA damage. *Cell Death Differ.* 16: 1641-1653.
- Demonbreun, A.R., et al. 2015. Eps 15 Homology Domain (EHD)-1 remodels transverse tubules in skeletal muscle. *PLoS ONE* 10: e0136679.
- Zhang, C., et al. 2017. MG53 is dispensable for T-tubule maturation but critical for maintaining T-tubule integrity following cardiac stress. *J. Mol. Cell. Cardiol.* 112: 123-130.
- Kolstad, T.R., et al. 2018. Ryanodine receptor dispersion disrupts Ca<sup>2+</sup> release in failing cardiac myocytes. *Elife* 7: e39427.
- Lawless, M., et al. 2019. Phosphodiesterase 5 inhibition improves contractile function and restores transverse tubule loss and catecholamine responsiveness in heart failure. *Sci. Rep.* 9: 6801.

## RESEARCH USE

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