

Dynamin I (3G4B6): sc-53877

BACKGROUND

Members of the Dynamin family, including Dynamin I and Dynamin II, are GTPase, microtubule-associated proteins which are involved in endocytosis, synaptic transmission and neurogenesis. Dynamin I is localized to the central nervous system, while Dynamin II exhibits ubiquitous distribution with highest expression found in testis. Both Dynamin proteins contain SH3 and proline-rich domains that mediate interactions between the Dynamins and effectors of their GTPase activity. The interactions with these effectors, which include microtubules, acidic phospholipids and SH3 domain-containing proteins, are required for rapid endocytosis. Dynamin I appears to be recruited to Clathrin coated pits by SH3 domain interaction with Amphiphysin, a protein highly expressed in brain.

REFERENCES

- Sontag, J.M., et al. 1994. Differential expression and regulation of multiple Dynamins. *J. Biol. Chem.* 269: 4547-4554.
- Scaife, R., et al. 1994. Grow factor-induced binding of Dynamin to signal transduction proteins involves sorting to distinct and separate proline-rich Dynamin sequences. *EMBO J.* 13: 2574-2582.
- Cook, T.A., et al. 1995. Identification of Dynamin II, an isoform ubiquitously expressed in rat tissues. *Proc. Natl. Acad. Sci. USA* 91: 644-648.
- Shpetner, H.S., et al. 1996. A binding site for SH3 domains targets Dynamin to coated pits. *J. Biol. Chem.* 271: 13-16.
- Okamoto, P.M., et al. 1997. Role of the basic, proline-rich region of Dynamin in Src homology 3 domain binding and endocytosis. *J. Biol. Chem.* 272: 11629-11635.
- Scaife, R.M., et al. 1997. The role of the PH domain and SH3 binding domains in Dynamin function. *Cell. Signal.* 9: 395-401.
- Grabs, D., et al. 1997. The SH3 domain of Amphiphysin binds the proline-rich domain of Dynamin at a single site that defines a new SH3 binding consensus sequence. *J. Biol. Chem.* 272: 13419-13425.
- Wigge, P., et al. 1997. Inhibition of receptor-mediated endocytosis by the Amphiphysin SH3 domain. *Curr. Biol.* 7: 554-560.

CHROMOSOMAL LOCATION

Genetic locus: DNM1 (human) mapping to 9q34.11; Dnm1 (mouse) mapping to 2 B.

SOURCE

Dynamin I (3G4B6) is a mouse monoclonal antibody raised against purified truncated recombinant Dynamin I of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

Dynamin I (3G4B6) is recommended for detection of Dynamin 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Dynamin I siRNA (h): sc-43737, Dynamin I siRNA (m): sc-35234, Dynamin I shRNA Plasmid (h): sc-43737-SH, Dynamin I shRNA Plasmid (m): sc-35234-SH, Dynamin I shRNA (h) Lentiviral Particles: sc-43737-V and Dynamin I shRNA (m) Lentiviral Particles: sc-35234-V.

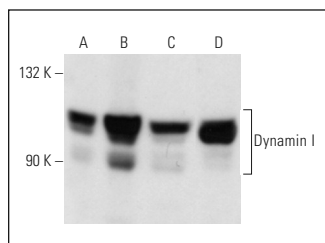
Molecular Weight of Dynamin I: 100 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, Dynamin I (h): 293T Lysate: sc-117282 or U-87 MG cell lysate: sc-2411.

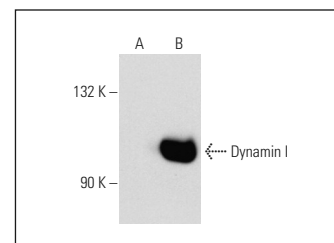
RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto A Blocking Reagent: sc-2333 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



Dynamin I (3G4B6): sc-53877. Western blot analysis of Dynamin I expression in SK-N-SH (A), NIH/3T3 (B), U-87 MG (C) and SH-SY5Y (D) whole cell lysates.



Dynamin I (3G4B6): sc-53877. Western blot analysis of Dynamin I expression in non-transfected: sc-117752 (A) and human Dynamin I transfected: sc-117282 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- González-Jamett, A.M., et al. 2013. Dynamin-2 regulates fusion pore expansion and quantal release through a mechanism that involves actin dynamics in neuroendocrine chromaffin cells. *PLoS ONE* 8: e70638.

STORAGE

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