SANTA CRUZ BIOTECHNOLOGY, INC.

Dynamin I (4E67): sc-58260

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Sontag, J.M., et al. 1994. Differential expression and regulation of multiple Dynamins. J. Biol. Chem. 269: 4547-4554.
2. 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.
3. Cook, T.A., et al. 1994. Identification of Dynamin II, an isoform ubiquitously expressed in rat tissues. Proc. Natl. Acad. Sci. USA 91: 644-648.
4. Shpetner, H.S., et al. 1996. A binding site for SH3 domains targets Dynamin to coated pits. J. Biol. Chem. 271: 13-16.
5. 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.
6. Scaife, R.M., et al. 1997. The role of the PH domain and SH3 binding domains in Dynamin function. Cell. Signal. 9: 395-401.
7. 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.
8. Wigge, P., et al. 1997. Inhibition of receptor-mediated endocytosis by the Amphiphysin SH3 domain. Curr. Biol. 7: 554-560.

SOURCE

Dynamin I (4E67) is a mouse monoclonal antibody raised against amino acids 1-750 of Dynamin I of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

Dynamin I (4E67) is recommended for detection of Dynamin I, Dynamin II and Dynamin III of mouse, rat, human and bovine 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).

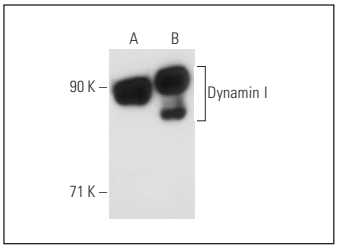
Molecular Weight of Dynamin I: 100 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

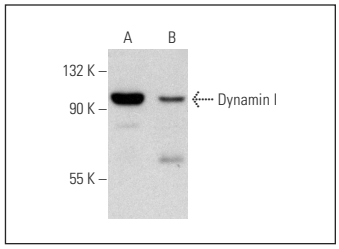
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Dynamin I (4E67): sc-58260. Western blot analysis of Dynamin I expression in SH-SY5Y whole cell lysate (**A**) and human cerebral cortex tissue extract (**B**).



Dynamin I (4E67): sc-58260. Western blot analysis of Dynamin I expression in NIH/3T3 (**A**) and KNRK (**B**) whole cell lysates.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.