

p-Dynamin I (F-11): sc-377568

BACKGROUND

Dynamin I is a GTPase enzyme required for the retrieval of synaptic vesicles after exocytosis and functions in endocytosis by stimulating assembly of invaginating synaptic vesicles. Dynamin I is phosphorylated in nerve terminals exclusively in the cytosolic compartment and *in vitro* by protein kinase C (PKC). The phosphorylation site in PKC-phosphorylated Dynamin I is a single site at Serine 795, which is located near a binding site for the SH3 domain of p85, the regulatory subunit of phosphatidylinositol 3-kinase. Dephosphorylation is required for synaptic vesicle retrieval, suggesting that phosphorylation affects the subcellular localization of Dynamin I.

REFERENCES

1. Koenig, J.H. and Ikeda, K. 1989. Disappearance and reformation of synaptic vesicle membrane upon transmitter release observed under reversible blockage of membrane retrieval. *J. Neurosci.* 9: 3844-3860.
2. Robinson, P.J. 1991. Dephosphin, a 96,000 Da substrate of protein kinase C in synaptosomal cytosol, is phosphorylated in intact synaptosomes. *FEBS Lett.* 282: 388-392.
3. Robinson, P.J., et al. 1993. Dynamin GTPase regulated by protein kinase C phosphorylation in nerve terminals. *Nature* 365: 163-166.
4. Liu, J.P., et al. 1994. Dynamin I is a Ca²⁺-sensitive phospholipid-binding protein with very high affinity for protein kinase C. *J. Biol. Chem.* 269: 21043-21050.
5. Powell, K.A., et al. 2000. Phosphorylation of Dynamin I on Ser-795 by protein kinase C blocks its association with phospholipids. *J. Biol. Chem.* 275: 11610-11617.

CHROMOSOMAL LOCATION

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

SOURCE

p-Dynamin I (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 781-804 Ser 795 of Dynamin I 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.

p-Dynamin I (F-11) is available conjugated to agarose (sc-377568 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377568 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377568 PE), fluorescein (sc-377568 FITC), Alexa Fluor[®] 488 (sc-377568 AF488), Alexa Fluor[®] 546 (sc-377568 AF546), Alexa Fluor[®] 594 (sc-377568 AF594) or Alexa Fluor[®] 647 (sc-377568 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377568 AF680) or Alexa Fluor[®] 790 (sc-377568 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377568 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

p-Dynamin I (F-11) is recommended for detection of Ser 795 phosphorylated Dynamin I of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

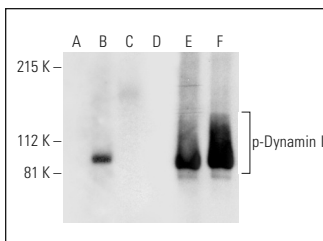
p-Dynamin I (F-11) is also recommended for detection of correspondingly phosphorylated Dynamin I in additional species, including canine, bovine, porcine and avian.

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.

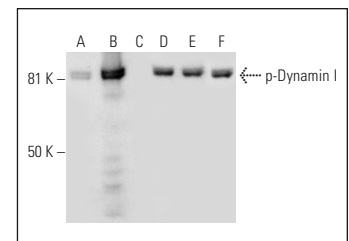
Molecular Weight of p-Dynamin I: 100 kDa.

Positive Controls: Dynamin I (h): 293T Lysate: sc-117282 or SH-SY5Y cell lysate: sc-3812.

DATA



Western blot analysis of Dynamin I phosphorylation in non-transfected: sc-117752 (A,D), untreated human Dynamin I transfected: sc-117282 (B,E) and lambda protein phosphatase (sc-200312A) treated human Dynamin I transfected: sc-117282 (C,F) 293T whole cell lysates. Antibodies tested include p-Dynamin I (F-11): sc-377568 (A,B,C) and Dynamin I (D5): sc-12724 (D,E,F).



Western blot analysis of Dynamin I phosphorylation in untreated (A,D), Ser/Thr induction cocktail (sc-362324) treated (B,E) and Ser/Thr induction cocktail (sc-362324) and lambda protein phosphatase (sc-200312A) treated (C,F) SH-SY5Y whole cell lysates. Antibodies tested include p-Dynamin I (F-11): sc-377568 (A,B,C) and Dynamin I (D5): sc-12724 (D,E,F).

SELECT PRODUCT CITATIONS

1. Choi, H., et al. 2019. Apoptosis signal-regulating kinase 1 activation by Nox1-derived oxidants is required for TNFα receptor endocytosis. *Am. J. Physiol. Heart Circ. Physiol.* 316: H1528-H1537.

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.

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