

Dynamin I (D5): sc-12724

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.

CHROMOSOMAL LOCATION

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

SOURCE

Dynamin I (D5) is a mouse monoclonal antibody raised against amino acids 1-750 of Dynamin I of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dynamin I (D5) is available conjugated to agarose (sc-12724 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-12724 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-12724 PE), fluorescein (sc-12724 FITC), Alexa Fluor® 488 (sc-12724 AF488), Alexa Fluor® 546 (sc-12724 AF546), Alexa Fluor® 594 (sc-12724 AF594) or Alexa Fluor® 647 (sc-12724 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-12724 AF680) or Alexa Fluor® 790 (sc-12724 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Dynamin I (D5) is recommended for detection of Dynamin I of mouse, rat, human, canine 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)] 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.

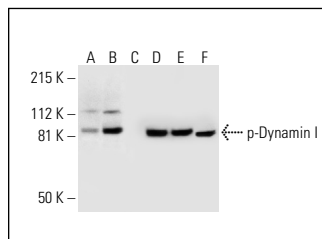
Molecular Weight of Dynamin I: 100 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, mouse brain extract: sc-2253 or SH-SY5Y cell lysate: sc-3812.

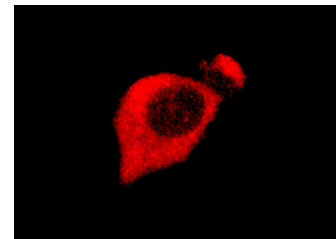
STORAGE

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

DATA



Western blot analysis of Dynamin I phosphorylation in untreated (A,D), Ser/Thr Phosphorylation Induction Cocktail (sc-362324) treated (B,E) and Ser/Thr Phosphorylation Induction Cocktail (sc-362324) and lambda protein phosphatase (sc-200312A) treated (C,F) SH-SY5Y whole cell lysates. Antibodies tested include p-Dynamin I (E-9): sc-377563 (A,B,C) and Dynamin I (D5): sc-12724 (D,E,F).



Dynamin I (D5): sc-12724. Immunofluorescence staining of methanol-fixed SK-N-SH cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

- Kolokoltsov, A.A., et al. 2007. Small interfering RNA profiling reveals key role of clathrin-mediated endocytosis and early endosome formation for infection by respiratory syncytial virus. *J. Virol.* 81: 7786-7800.
- Jeffrey, M., et al. 2009. Strain-associated variations in abnormal PrP trafficking of sheep scrapie. *Brain Pathol.* 19: 1-11.
- Malik, R., et al. 2012. Novel roles for the E3 ubiquitin ligase atrophin-interacting protein 4 and signal transduction adaptor molecule 1 in G protein-coupled receptor signaling. *J. Biol. Chem.* 287: 9013-9027.
- Tanifuji, S., et al. 2013. Dynamin isoforms decode action potential firing for synaptic vesicle recycling. *J. Biol. Chem.* 288: 19050-19059.
- Lutz, D., et al. 2014. Myelin basic protein cleaves cell adhesion molecule L1 and promotes neuritogenesis and cell survival. *J. Biol. Chem.* 289: 13503-13518.
- Ni, Y.X., et al. 2018. A new role of anterograde motor Kif5b in facilitating large clathrin-coated vesicle mediated endocytosis via regulating clathrin uncoating. *Cell Discov.* 4: 65.
- Flores-Muñoz, C., et al. 2022. The long-term pannexin 1 ablation produces structural and functional modifications in hippocampal neurons. *Cells* 11: 3646.
- Bademosi, A.T., et al. 2023. EndophilinA-dependent coupling between activity-induced calcium influx and synaptic autophagy is disrupted by a Parkinson-risk mutation. *Neuron* 111: 1402-1422.e13.

RESEARCH USE

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