

Endophilin III (F-4): sc-376592

BACKGROUND

The endophilins comprise a family of three SH3 domain-containing proteins designated Endophilin I, II and III, or alternatively known as SH3P4, SH3P8 and SH3P13, respectively. These proteins associate with Amphiphysin, Synaptojanin and Dynamin and are implicated in presynaptic vesicle trafficking at nerve terminals. The expression patterns of the endophilins are consistent with their cellular functions at the neuronal synapse, as Endophilin I is expressed only in the brain. Both Endophilin II and Endophilin III are detected in a variety of tissues. Endophilin I is also implicated in modulating G protein-coupled receptor signaling by functioning as an adapter protein and directing β_1 -adrenergic receptors to the endocytic machinery.

REFERENCES

- Giachino, C., et al. 1997. Novel SH3-containing human gene family preferentially expressed in the central nervous system. *Genomics* 41: 427-434.
- Ringstad, N., et al. 1997. The SH3p4/Sh3p8/SH3p13 protein family: binding partners for Synaptojanin and Dynamin via a GRB2-like Src homology 3 domain. *Proc. Natl. Acad. Sci. USA* 94: 8569-8574.
- Micheva, K.D., et al. 1997. SH3 domain-dependent interactions of Endophilin with Amphiphysin. *FEBS Lett.* 414: 308-312.
- Cestra, G., et al. 1999. The SH3 domains of Endophilin and Amphiphysin bind to the proline-rich region of Synaptojanin 1 at distinct sites that display an unconventional binding specificity. *J. Biol. Chem.* 274: 32001-32007.
- Schmidt, A., et al. 1999. Endophilin I mediates synaptic vesicle formation by transfer of arachidonate to lysophosphatidic acid. *Nature* 401: 133-141.
- Simpson, F., et al. 1999. SH3-domain-containing proteins function at distinct steps in Clathrin-coated vesicle formation. *Nat. Cell Biol.* 1: 119-124.

CHROMOSOMAL LOCATION

Genetic locus: SH3GL3 (human) mapping to 15q25.2; Sh3gl3 (mouse) mapping to 7 D3.

SOURCE

Endophilin III (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 315-340 at the C-terminus of Endophilin III of human origin.

PRODUCT

Each vial contains 200 μ g IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376592 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Endophilin III (F-4) is recommended for detection of Endophilin III of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); may cross-react with Endophilin I and Endophilin II.

Suitable for use as control antibody for Endophilin III siRNA (h): sc-35308, Endophilin III siRNA (m): sc-35309, Endophilin III shRNA Plasmid (h): sc-35308-SH, Endophilin III shRNA Plasmid (m): sc-35309-SH, Endophilin III shRNA (h) Lentiviral Particles: sc-35308-V and Endophilin III shRNA (m) Lentiviral Particles: sc-35309-V.

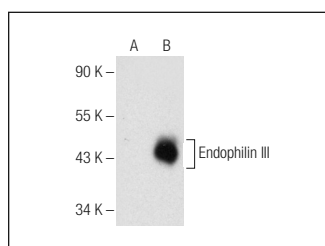
Molecular Weight of Endophilin III: 40 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or Endophilin III (m): 293T Lysate: sc-126796.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Endophilin I-III (F-4): sc-376592. Western blot analysis of Endophilin III expression in non-transfected: sc-117752 (A) and mouse Endophilin III transfected: sc-126796 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Poudeh, K.R., et al. 2018. Competition between TIAM1 and membranes balances Endophilin A3 activity in cancer metastasis. *Dev. Cell* 45: 738-752.e6.
- Markworth, R., et al. 2021. Tubular microdomains of Rab7-positive endosomes retrieve TrkA, a mechanism disrupted in Charcot-Marie-Tooth disease 2B. *J. Cell Sci.* 134: jcs258559.

RESEARCH USE

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