

# Endophilin I (4D12): sc-134329

## 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  $\beta_1$  adrenergic receptors to the endocytic machinery.

## REFERENCES

1. Giachino, C., et al. 1997. Novel SH3-containing human gene family preferentially expressed in the central nervous system. *Genomics* 41: 427-434.
2. 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.
3. Micheva, K.D., et al. 1997. SH3 domain-dependent interactions of endophilin with amphiphysin. *FEBS Lett.* 414: 308-312.
4. 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.
5. Schmidt, A., et al. 1999. Endophilin I mediates synaptic vesicle formation by transfer of arachidonate to lysophosphatidic acid. *Nature* 401: 133-141.
6. Simpson, F., et al. 1999. SH3-domain-containing proteins function at distinct steps in clathrin-coated vesicle formation. *Nat. Cell Biol.* 1: 119-124.
7. Tang, Y., et al. 1999. Identification of the endophilins (SH3p4/p8/p13) as novel binding partners for the  $\beta_1$ -adrenergic receptor. *Proc. Natl. Acad. Sci. USA* 96: 12559-12564.

## CHROMOSOMAL LOCATION

Genetic locus: SH3GL2 (human) mapping to 9p22.2; Sh3gl2 (mouse) mapping to 4 C4.

## SOURCE

Endophilin I (4D12) is a mouse monoclonal antibody raised against recombinant Endophilin I protein of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> 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

Endophilin I (4D12) is recommended for detection of Endophilin I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Endophilin I siRNA (h): sc-35304, Endophilin I siRNA (m): sc-35305, Endophilin I shRNA Plasmid (h): sc-35304-SH, Endophilin I shRNA Plasmid (m): sc-35305-SH, Endophilin I shRNA (h) Lentiviral Particles: sc-35304-V and Endophilin I shRNA (m) Lentiviral Particles: sc-35305-V.

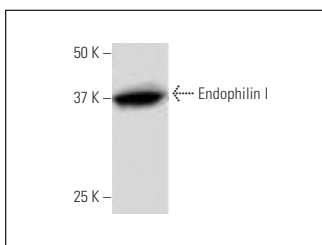
Molecular Weight of Endophilin I: 40 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse testis extract: sc-2405 or PC-12 cell lysate: sc-2250.

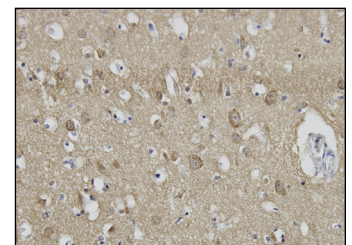
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Endophilin I (4D12): sc-134329. Western blot analysis of Endophilin I expression in PC-12 whole cell lysate.



Endophilin I (4D12): sc-134329. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic and membrane localization.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.