



# epsin 4 siRNA (h): sc-105334

## BACKGROUND

The mechanism by which receptor tyrosine kinases (RTKs) modulate cellular physiology in response to stimuli is critical to the understanding of growth regulation. Errors in RTK signaling pathways may result in cellular transformation and, ultimately, in cancer. Two novel EGF receptor substrates function in this pathway, designated EGF-receptor pathway substrates 8 and 15, or Eps8 and Eps15. Epsin is a binding partner to Eps15. Both epsin and Eps15 have a ubiquitous tissue distribution but are concentrated in presynaptic nerve terminals specialized for the Clathrin-mediated endocytosis of synaptic vesicles. Disruption of epsin function blocks Clathrin-mediated endocytosis. Epsin, along with its binding partner Eps15, is proposed to be involved in the assistance of Clathrin coat rearrangement during Clathrin coated pit invagination. The epsin 4 gene is located on chromosome 5q33.3, and encodes for a Clathrin-associated member of the epsin family that has a role in transport and stability of neurotransmitter vesicles at the synapses and within neurons. Abnormalities in the structure, function, or expression of epsin 4 are linked to schizophrenia susceptibility.

## REFERENCES

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2. Stahelin, R.V., et al. 2003. Contrasting membrane interaction mechanisms of AP180 N-terminal homology (ANTH) and epsin N-terminal homology (ENTH) domains. *J. Biol. Chem.* 278: 28993-28999.
3. Brzustowicz, L.M., et al. 2004. Linkage disequilibrium mapping of schizophrenia susceptibility to the CAPON region of chromosome 1q22. *Am. J. Hum. Genet.* 74: 1057-1063.
4. Hyun, T.S., et al. 2004. HIP1 and HIP1r stabilize receptor tyrosine kinases and bind 3-phosphoinositides via epsin N-terminal homology domains. *J. Biol. Chem.* 279: 14294-14306.
5. Pimm, J., et al. 2005. The epsin 4 gene on chromosome 5q, which encodes the Clathrin-associated protein enthoprotin, is involved in the genetic susceptibility to schizophrenia. *Am. J. Hum. Genet.* 76: 902-907.
6. Kweon, D.H., et al. 2006. Membrane topology of helix 0 of the epsin N-terminal homology domain. *Mol. Cells* 21: 428-435.
7. Liou, Y.J., et al. 2006. Genetic analysis of the human ENTH (epsin 4) gene and schizophrenia. *Schizophr. Res.* 84: 236-243.
8. Tang, R.Q., et al. 2006. Family-based association study of epsin 4 and schizophrenia. *Mol. Psychiatry* 11: 395-399.

## CHROMOSOMAL LOCATION

Genetic locus: CLINT1 (human) mapping to 5q33.3.

## RESEARCH USE

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

## PROTOCOLS

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

## PRODUCT

epsin 4 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see epsin 4 shRNA Plasmid (h): sc-105334-SH and epsin 4 shRNA (h) Lentiviral Particles: sc-105334-V as alternate gene silencing products.

For independent verification of epsin 4 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105334A, sc-105334B and sc-105334C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

epsin 4 siRNA (h) is recommended for the inhibition of epsin 4 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

epsin 4 (C-4): sc-518242 is recommended as a control antibody for monitoring of epsin 4 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor epsin 4 gene expression knockdown using RT-PCR Primer: epsin 4 (h)-PR: sc-105334-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.