SANTA CRUZ BIOTECHNOLOGY, INC.

epsin 4 (S-16): sc-51364

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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 schizphrenia susceptibility.

REFERENCES

1. Ford, M.G., Mills, I.G., Peter, B.J., Vallis, Y., Praefcke, G.J., Evans, P.R. and McMahon, H.T. 2002. Curvature of clathrin-coated pits driven by epsin. Nature 419: 361-366.
2. Stahelin, R.V., Long, F., Peter, B.J., Murray, D., De Camilli, P., McMahon, H.T. and Cho, W. 2003. Contrasting membrane interaction mechanisms of AP180 N-terminal η and epsin N-terminal homology (ENTH) domains. J. Biol. Chem. 278: 28993-28999.
3. Brzustowicz, L.M., Simone, J., Mohseni, P., Hayter, J.E., Hodgkinson, K.A., Chow, E.W. and Bassett, A.S. 2004. Linkage disequilibrium mapping of schizophrenia suscept region of chromosome 1q22. Am. J. Hum. Genet. 74: 1057-1063.
4. Hyun, T.S., Rao, D.S., Saint-Dic, D., Michael, L.E., Kumar, P.D., Bradley, S.V., Mizukami, I.F., Oravecz-Wilson, K.I. and Ross, T.S. 2004. HIP1 and HIP1r stabilize recep via epsin N-terminal homology domains. J. Biol. Chem. 279: 14294-14306.
5. Pimm, J., McQuillin, A., Thirumalai, S., Lawrence, J., Quested, D., Bass, N., Lamb, G., Moorey, H., Datta, S.R., Kalsi, G., Badacsonyi, A., Kelly, K., Morgan, J., Punukollu, B., Curtis, D. and Gurling, H. 2005. The Epsin 4 gene on chromosome 5 enthoprotin, is involved in the genetic susceptibility to schizophrenia. Am. J. Hum. Genet. 76: 902-907.
6. Kweon, D.H., Shin, Y.K., Shin, J.Y., Lee, J.H., Lee, J.B., Seo, J.H. and Kim, Y.S. 2006. Membrane topology of helix 0 of the Epsin N-terminal homology domain. Mol. Cells 21: 428-435.
7. Liou, Y.J., Lai, I.C., Wang, Y.C., Bai, Y.M., Lin, C.C., Lin, C.Y., Chen, T.T. and Chen, J.Y. 2006. Genetic analysis of the human ENTH (Epsin 4) gene and schizophrenia. Schizophrenia Res. 84: 236-243.
8. Tang, R.Q., Zhao, X.Z., Shi, Y.Y., Tang, W., Gu, N.F., Feng, G.Y., Xing, Y.L., Zhu, S.M., Sang, H., Liang, P.J. and He, L. 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.

SOURCE

epsin 4 (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of epsin 4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-51364 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

epsin 4 (S-16) is recommended for detection of epsin 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

epsin 4 (S-16) is also recommended for detection of epsin 4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for epsin 4 siRNA (h): sc-105334, epsin 4 siRNA (m): sc-144916, epsin 4 shRNA Plasmid (h): sc-105334-SH, epsin 4 shRNA Plasmid (m): sc-144916-SH, epsin 4 shRNA (h) Lentiviral Particles: sc-105334-V and epsin 4 shRNA (m) Lentiviral Particles: sc-144916-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.