SANTA CRUZ BIOTECHNOLOGY, INC.

ERBIN siRNA (m): sc-40542

BACKGROUND

The ErbB-2 receptor tyrosine kinase evolved as a shared co-receptor of all ErbB-specific growth factors and acts as a coordinator of a variety of biological signaling networks. ErbB-2 couples ErbB receptors to the migration/invasion machinery of carcinoma cells by employing adaptor proteins, such as p130CAS and c-Crk II, which regulate the Actin-Myosin cytoskeleton of migratory cells. ErbB-2 is expressed in basal cells of sqamous epithelia and is important in the morphogenesis and oncogenesis of secretory epithelia. In epithelia, ErbB-2 employs the adaptor protein ERBIN (ErbB-2 interacting protein), which functions in the localization and signaling of ErbB-2. ERBIN contains a PDZ domain that directly and specifically interacts with ErbB-2, causing ERBIN and ErbB-2 to co-localize to the lateral membrane of intestinal epithelial cells. ERBIN provides further evidence to support the claim that the tumorigenic action of ErbB-2 may be attributed to its ability to acts as a shared signaling subunit, rather than functioning as a distinct receptor.

REFERENCES

1. Pinkas-Kramarski, R., et al. 1997. ErbB receptors and EGF-like ligands: cell lineage determination and oncogenesis through combinatorial signaling. J. Mammary Gland Biol. Neoplasia 2: 97-107.
2. Xie, W., et al. 1998. Targeted expression of activated ErbB-2 to the epidermis of transgenic mice elicits striking developmental abnormalities in the epidermis and hair follicles. Cell Growth Differ. 9: 313-325.
3. Klapper, L.N., et al. 1999. The ErbB-2/HER2 oncoprotein of human carcinomas may function solely as a shared coreceptor for multiple stroma-derived growth factors. Proc. Natl. Acad. Sci. USA 96: 4995-5000.
4. Spencer, K.S., et al. 2000. ErbB-2 is necessary for induction of carcinoma cell invasion by ErbB family receptor tyrosine kinases. J. Cell Biol. 148: 385-397.
5. Borg, J.P., et al. 2000. ERBIN: a basolaeral PDZ protein that interacts with the mammalian ErbB-2/HER2 receptor. Nat. Cell Biol. 2: 407-414.

CHROMOSOMAL LOCATION

Genetic locus: Erbb2ip (mouse) mapping to 13 D1.

PRODUCT

ERBIN siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ERBIN shRNA Plasmid (m): sc-40542-SH and ERBIN shRNA (m) Lentiviral Particles: sc-40542-V as alternate gene silencing products.

For independent verification of ERBIN (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40542A, sc-40542B and sc-40542C.

PROTOCOLS

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

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ERBIN siRNA (m) is recommended for the inhibition of ERBIN expression in mouse 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 µM in 66 µl. 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

ERBIN (10D2): sc-293468 is recommended as a control antibody for monitoring of ERBIN 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ERBIN gene expression knockdown using RT-PCR Primer: ERBIN (m)-PR: sc-40542-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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