SANTA CRUZ BIOTECHNOLOGY, INC.

DBC-2 siRNA (m): sc-142879

BACKGROUND

The Rho subfamily of Ras-related GTPases controls multiple aspects of cell function, including cytoskeletal rearrangement, nuclear signaling and cell growth. DBC-2 (deleted in breast cancer 2 gene protein), also known as RHOBTB2 (Rho-related BTB domain-containing protein 2), is a 727 amino acid member of the RhoBTB subfamily of Rho GTPases. Members of the RhoBTB subfamily are evolutionarily conserved and are characterized by a proline-rich region, a GTPase domain and two tandem BTB repeats. Expressed ubiquitously with highest levels in neural tissue, heart, brain and fetal lung, DBC-2 contains two BTB (POZ) domains through which it may bind to and regulate the function of target proteins, such as CUL-3. Additionally, DBC-2 is thought to function as a regulator of cell cycle and apoptosis events. Under normal conditions, DBC-2 is thought to exhibit tumor suppressor activity. Mutations in the gene encoding DBC-2 are associated with breast cancer, suggesting that mutated DBC-2 may play a role in carcinogenesis.

REFERENCES

1. Ramos, S., et al. 2002. Genomic organization and expression profile of the small GTPases of the RhoBTB family in human and mouse. Gene 298: 147-157.
2. Hamaguchi, M., et al. 2002. DBC-2, a candidate for a tumor suppressor gene involved in breast cancer. Proc. Natl. Acad. Sci. USA 99: 13647-13652.
3. Wilkins, A., et al. 2004. RhoBTB2 is a substrate of the mammalian CUL-3 ubiquitin ligase complex. Genes Dev. 18: 856-861.
4. Siripurapu, V., et al. 2005. DBC-2 significantly influences cell-cycle, apoptosis, cytoskeleton and membrane-trafficking pathways. J. Mol. Biol. 346: 83-89.
5. Chang, F.K., et al. 2006. DBC-2 is essential for transporting vesicular stomatitis virus glycoprotein. J. Mol. Biol. 364: 302-308.
6. Ohadi, M., et al. 2007. Mutation analysis of the DBC-2 gene in sporadic and familial breast cancer. Acta Oncol. 46: 770-772.
7. Yoshihara, T., et al. 2007. Cyclin D1 down-regulation is essential for DBC-2's tumor suppressor function. Biochem. Biophys. Res. Commun. 358: 1076-1079.

CHROMOSOMAL LOCATION

Genetic locus: Rhobtb2 (mouse) mapping to 14 D2.

PRODUCT

DBC-2 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 DBC-2 shRNA Plasmid (m): sc-142879-SH and DBC-2 shRNA (m) Lentiviral Particles: sc-142879-V as alternate gene silencing products.

For independent verification of DBC-2 (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-142879A, sc-142879B and sc-142879C.

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

DBC-2 siRNA (m) is recommended for the inhibition of DBC-2 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

DBC-2 (G-12): sc-398774 is recommended as a control antibody for monitoring of DBC-2 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 DBC-2 gene expression knockdown using RT-PCR Primer: DBC-2 (m)-PR: sc-142879-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.

PROTOCOLS

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