SANTA CRUZ BIOTECHNOLOGY, INC.

Dbl siRNA (m): sc-35182

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The Power to Question

BACKGROUND

The superfamily of GTP binding proteins, for which the Ras proteins are prototypes, has been implicated in regulation of a broad range of biological activities. One member of the family, Cdc42Hs (originally referred to as Gp or G25K), appears to represent the human homolog of the *Saccharomyces cerevisiae* cell division protein, Cdc42Sc. The predicted amino acid sequence of Cdc42Hs is very similar to those of various members of the Ras superfamily proteins including N-, K- and H-Ras proteins (30-35% identical), Rho proteins (50% identical) and the Rac proteins (70% identical). A second *S. cerevisiae* protein, Cdc24, which is known from complementation studies to act with Cdc42Sc to regulate the development of normal cell shape in yeast, contains a region of sequence homology with the Dbl oncogene product. Dbl specifically catalyzes the dissociation of GDP from Cdc42Hs, thus representing a highly selective guanine nucleotide exchange factor for Cdc42Hs.

REFERENCES

1. Evans, T., et al. 1986. Purification of the major GTP-binding proteins from human placental membranes. J. Biol. Chem. 261: 7052-7059.
2. Ron, D., et al. 1988. Molecular cloning and characterization of the human Dbl proto-oncogene: evidence that its overexpression is sufficient to transform NIH/3T3 cells. EMBO J. 7: 2465-2473.
3. Hall, A. 1990. The cellular functions of small GTP-binding proteins. Science 249: 635-640.
4. Bourne, H.R., et al. 1990. The GTPase superfamily: a conserved switch for diverse cell functions. Nature 348: 125-132.
5. Adams, A.E.M., et al. 1990. CDC42 and CDC43, two additional genes involved in budding and the establishment of cell polarity in the yeast *Saccharomyces cerevisiae*. J. Cell Biol. 111: 131-142.
6. Munemitsu, S., et al. 1990. Molecular cloning and expression of a G25K cDNA, the human homolog of the yeast cell cycle gene CDC42. Mol. Cell. Biol. 10: 5977-5982.

CHROMOSOMAL LOCATION

Genetic locus: Mcf2 (mouse) mapping to X A6.

PRODUCT

Dbl 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 Dbl shRNA Plasmid (m): sc-35182-SH and Dbl shRNA (m) Lentiviral Particles: sc-35182-V as alternate gene silencing products.

For independent verification of Dbl (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-35182A, sc-35182B and sc-35182C.

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

Dbl siRNA (m) is recommended for the inhibition of Dbl 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Dbl gene expression knockdown using RT-PCR Primer: Dbl (m)-PR: sc-35182-PR (20 µl, 582 bp). 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.