SANTA CRUZ BIOTECHNOLOGY, INC.

DUE-B siRNA (h): sc-77189

BACKGROUND

DUE-B, also known as DTD1 (D-tyrosyl-tRNA deacylase 1) or HARS2, is a 209 amino acid protein that localizes to the cytoplasm and belongs to the DTD family. Expressed in several adult and fetal tissues with higher expression in ovary, spleen and testis, DUE-B functions to catalyze the hydrolysis of D-tyrosyl-tRNA(Tyr) into D-tyrosine and free tRNA(Tyr), an event that may serve as an important defense mechanism against D-tyrosine. Additionally, DUE-B is thought to play an important role in the S phase of the cell cycle, as well as in the initiation of DNA replication. Human DUE-B shares 94% sequence identity with its mouse counterpart, suggesting a conserved function between species. The gene encoding DUE-B maps to human chromosome 20, which houses over 600 genes and comprises nearly 2% of the human genome.

REFERENCES

1. Soutourina, J., et al. 2000. D-tyrosyl-tRNA(Tyr) metabolism in *Saccharomyces cerevisiae*. J. Biol. Chem. 275: 11626-11630.
2. Meng, X., et al. 2002. Cloning and identification of a novel cDNA which may be associated with FKBP25. Biochem. Genet. 40: 303-310.
3. Casper, J.M., et al. 2005. The c-Myc DNA-unwinding element-binding protein modulates the assembly of DNA replication complexes *in vitro*. J. Biol. Chem. 280: 13071-13083.
4. Moaddel, R., et al. 2005. The synthesis and initial characterization of an immobilized DNA unwinding element binding (DUE-B) protein chromatographic stationary phase. J. Chromatogr. B Analyt. Technol. Biomed. Life Sci. 820: 197-203.
5. Ghosh, M., et al. 2006. Differential binding of replication proteins across the human c-myc replicator. Mol. Cell. Biol. 26: 5270-5283.
6. Kemp, M., et al. 2007. Structure and function of the c-Myc DNA-unwinding element-binding protein DUE-B. J. Biol. Chem. 282: 10441-10448.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610996. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: DTD1 (human) mapping to 20p11.23.

PRODUCT

DUE-B 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DUE-B shRNA Plasmid (h): sc-77189-SH and DUE-B shRNA (h) Lentiviral Particles: sc-77189-V as alternate gene silencing products.

For independent verification of DUE-B (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-77189A, sc-77189B and sc-77189C.

RESEARCH USE

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

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

DUE-B siRNA (h) is recommended for the inhibition of DUE-B 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 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

DUE-B (D-7): sc-515087 is recommended as a control antibody for monitoring of DUE-B 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 DUE-B gene expression knockdown using RT-PCR Primer: DUE-B (h)-PR: sc-77189-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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