

TLL2 siRNA (m): sc-154296

BACKGROUND

TLL2 (tollid-like protein 2) is a 1,015 amino acid secreted protein that belongs to the peptidase M12A family. TLL2 contains five CUB domains, two EGF-like domains and binds one zinc ion per subunit. Required for embryonic development, TLL2 is a predominant protease which, in development, influences dorsal-ventral patterning and skeletogenesis. TLL2 also specifically processes pro-lysyl oxidase. The gene that encodes TLL2 contains approximately 149,321 bases and maps to human chromosome 10q24. Spanning close to 135 million base pairs and encoding nearly 1,200 genes, chromosome 10 makes up approximately 4.5% of the human genome. Several protein-coding genes, including those that encode chemokines, cadherins, excision repair proteins, early growth response factors (Egrs) and fibroblast growth receptors (FGFRs), are located on chromosome 10. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie-Tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromic deafness, Wolman's syndrome, Cowden syndrome, Cockayne syndrome, multiple endocrine neoplasia type 2 and porphyria.

REFERENCES

1. Jabs, E.W., Li, X., Scott, A.F., Meyers, G., Chen, W., Eccles, M., Mao, J.L., Charnas, L.R., Jackson, C.E. and Jaye, M. 1994. Jackson-Weiss and Crouzon syndromes are allelic with mutations in fibroblast growth factor receptor 2. *Nat. Genet.* 8: 275-279.
2. Scott, I.C., Clark, T.G., Takahara, K., Hoffman, G.G., Eddy, R.L., Haley, L.L., Shows, T.B. and Greenspan, D.S. 1999. Assignment of TLL1 and TLL2, which encode human BMP-1/Tolloid-related metalloproteases, to chromosomes 4q32→q33 and 10q23→q24 and assignment of murine Tll2 to chromosome 19. *Cytogenet. Cell Genet.* 86: 64-65.
3. Scott, I.C., Blitz, I.L., Pappano, W.N., Imamura, Y., Clark, T.G., Steiglit, B.M., Thomas, C.L., Maas, S.A., Takahara, K., Cho, K.W. and Greenspan, D.S. 1999. Mammalian BMP-1/Tolloid-related metalloproteinases, including novel family member mammalian Tolloid-like 2, have differential enzymatic activities and distributions of expression relevant to patterning and skeletogenesis. *Dev. Biol.* 213: 283-300.
4. Uzel, M.I., Scott, I.C., Babakhanlou-Chase, H., Palamakumbura, A.H., Pappano, W.N., Hong, H.H., Greenspan, D.S. and Trackman, P.C. 2001. Multiple bone morphogenetic protein 1-related mammalian metalloproteinases process pro-lysyl oxidase at the correct physiological site and control lysyl oxidase activation in mouse embryo fibroblast cultures. *J. Biol. Chem.* 276: 22537-22543.
5. Berger, P., Young, P. and Suter, U. 2002. Molecular cell biology of Charcot-Marie-Tooth disease. *Neurogenetics* 4: 1-15.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606743. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Cho, M.Y., Kim, H.S., Eng, C., Kim, D.S., Kang, S.J., Eom, M., Yi, S.Y. and Bronner, M.P. 2008. First report of ovarian dysgerminoma in Cowden syndrome with germline PTEN mutation and PTEN-related 10q loss of tumor heterozygosity. *Am. J. Surg. Pathol.* 32: 1258-1264.

CHROMOSOMAL LOCATION

Genetic locus: Tll2 (mouse) mapping to 19 C3.

PRODUCT

TLL2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TLL2 shRNA Plasmid (m): sc-154296-SH and TLL2 shRNA (m) Lentiviral Particles: sc-154296-V as alternate gene silencing products.

For independent verification of TLL2 (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-154296A, sc-154296B and sc-154296C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TLL2 siRNA (m) is recommended for the inhibition of TLL2 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 μ M in 66 μ l. 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 TLL2 gene expression knockdown using RT-PCR Primer: TLL2 (m)-PR: sc-154296-PR (20 μ l). 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.