SANTA CRUZ BIOTECHNOLOGY, INC.

EXTL1 siRNA (m): sc-144986

BACKGROUND

EXTL1 (exostosin-like 1), also known as glucuronosyl-N-acetylglucosaminyl-proteoglycan 4-α-N-acetylglucosaminyltransferase or multiple exostosis-like protein, is a 676 amino acid single-pass type II membrane protein that localizes to the Endoplasmic reticulum membrane. Belonging to the glycosyltransferase 47 family, EXTL1 is highly homologous to family members EXTL2 and EXTL3, all of which may be potential candidates for mutations resulting in the development of benign multiple cartilagenous bone tumors, or exostoses. EXTL1 may have catalytic activity, acting as a glycosyltransferase essential for chain polymerization of heparan sulfate and heparin. The gene encoding EXTL1 maps to human chromosome 1p36; this region has been linked to a range of diseases including breast carcinoma, colorectal cancer and neuroblastoma.

REFERENCES

1. Wise, C.A., Clines, G.A., Massa, H., Trask, B.J. and Lovett, M. 1997. Identification and localization of the gene for EXTL, a third member of the multiple exostoses gene family. Genome Res. 7: 10-16.
2. Van Hul, W., Wuyts, W., Hendrickx, J., Speleman, F., Wauters, J., De Boulle, K., Van Roy, N., Bossuyt, P. and Willems, P.J. 1998. Identification of a third EXT-like gene (EXTL3) belonging to the EXT gene family. Genomics 47: 230-237.
3. Wuyts, W., Spieker, N., Van Roy, N., De Boulle, K., De Paepe, A., Willems, P.J., Van Hul, W., Versteeg, R. and Speleman, F. 1999. Refined physical mapping and genomic structure of the EXTL1 gene. Cytogenet. Cell Genet. 86: 267-270.
4. Stickens, D., Brown, D. and Evans, G.A. 2000. EXT genes are differentially expressed in bone and cartilage during mouse embryogenesis. Dev. Dyn. 218: 452-464.
5. Spieker, N., Beitsma, M., van Sluis, P., Roobeek, I., den Dunnen, J.T., Speleman, F., Caron, H. and Versteeg, R. 2000. An integrated 5-Mb physical, genetic, and radiation hybrid map of a 1p36.1 region implicated in neuroblastoma pathogenesis. Genes Chromosomes Cancer 27: 143-152.
6. Mathysen, D., Wuyts, W., Bossuyt, P.J., Wauters, J.G. and Van Hul, W. 2001. Assignment of the mouse Extl1 gene to the distal part of chromosome 4 by *in situ* hybridization and radiation hybrid mapping. Cytogenet. Cell Genet. 92: 162-163.
7. Kim, B.T., Kitagawa, H., Tamura, J., Saito, T., Kusche-Gullberg, M., Lindahl, U. and Sugahara, K. 2001. Human tumor suppressor EXT gene family members EXTL1 and EXTL3 encode α 1,4-N-acetylglucosaminyltransferases that likely are involved in heparan sulfate/heparin biosynthesis. Proc. Natl. Acad. Sci. USA 98: 7176-7181.
8. Hall, C.R., Cole, W.G., Haynes, R. and Hecht, J.T. 2002. Reevaluation of a genetic model for the development of exostosis in hereditary multiple exostosis. Am. J. Med. Genet. 112: 1-5.
9. Zak, B.M., Crawford, B.E. and Esko, J.D. 2002. Hereditary multiple exostoses and heparan sulfate polymerization. Biochim. Biophys. Acta 1573: 346-355.

CHROMOSOMAL LOCATION

Genetic locus: Extl1 (mouse) mapping to 4 D3.

PRODUCT

EXTL1 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 EXTL1 shRNA Plasmid (m): sc-144986-SH and EXTL1 shRNA (m) Lentiviral Particles: sc-144986-V as alternate gene silencing products.

For independent verification of EXTL1 (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-144986A, sc-144986B and sc-144986C.

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

EXTL1 siRNA (m) is recommended for the inhibition of EXTL1 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 EXTL1 gene expression knockdown using RT-PCR Primer: EXTL1 (m)-PR: sc-144986-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.