SANTA CRUZ BIOTECHNOLOGY, INC.

laeverin siRNA (h): sc-91662

BACKGROUND

Laeverin, also known as APQ (aminopeptidase Q), CHL2 antigen or LVRN, is a 990 amino acid member of the peptidase M1 family and contains an HEXXHX18E gluzincin motif and an H(G)AMEN motif. Expressed specifically in placenta on embryo-derived extravillous trophoblasts (EVTs), laeverin localizes to the cell membrane and is a single-pass type II membrane protein. Laeverin binds zinc and functions as a bestatin-sensitive leucine aminopeptidase with a potential role in EVT function. This suggests that laeverin may be involved in human placentation, during which EVTs invade maternal decidua and spiral areteries. More specifically, laeverin may function by regulating the activities of key peptides at the embryo-maternal interface. Laeverin has a broad substrate specificity but exhibits a preference for Leu-4-methylcoumaryl-7-amide. In addition, laeverin can form a homodimer with intermolecular disulfide bond(s).

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610046. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Fujiwara, H., Higuchi, T., Yamada, S., Hirano, T., Sato, Y., Nishioka, Y., Yoshioka, S., Tatsumi, K., Ueda, M., Maeda, M. and Fujii, S. 2004. Human extravillous trophoblasts express laeverin, a novel protein that belongs to membrane-bound gluzincin metallopeptidases. Biochem. Biophys. Res. Commun. 313: 962-968.
3. Fujiwara, H., Higuchi, T., Sato, Y., Nishioka, Y., Zeng, B.X., Yoshioka, S., Tatsumi, K., Ueda, M. and Maeda, M. 2005. Regulation of human extravillous trophoblast function by membrane-bound peptidases. Biochim. Biophys. Acta 1751: 26-32.
4. Haas, C.S., Creighton, C.J., Pi, X., Maine, I., Koch, A.E., Haines, G.K., Ling, S., Chinnaiyan, A.M. and Holoshitz, J. 2006. Identification of genes modulated in rheumatoid arthritis using complementary DNA microarray analysis of lymphoblastoid B cell lines from disease-discordant monozygotic twins. Arthritis Rheum. 54: 2047-2060.

CHROMOSOMAL LOCATION

Genetic locus: LVRN (human) mapping to 5q23.1.

PRODUCT

laeverin 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 laeverin shRNA Plasmid (h): sc-91662-SH and laeverin shRNA (h) Lentiviral Particles: sc-91662-V as alternate gene silencing products.

For independent verification of laeverin (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-91662A, sc-91662B and sc-91662C.

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

laeverin siRNA (h) is recommended for the inhibition of laeverin 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor laeverin gene expression knockdown using RT-PCR Primer: laeverin (h)-PR: sc-91662-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nystad, M., Sitras, V., Larsen, M. and Acharya, G. 2014. Placental expression of aminopeptidase-Q (laeverin) and its role in the pathophysiology of preeclampsia. Am. J. Obstet. Gynecol. 211: 686.

PROTOCOLS

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