SANTA CRUZ BIOTECHNOLOGY, INC.

Notch 3 siRNA (h): sc-37135

BACKGROUND

The LIN-12/Notch family of transmembrane receptors is believed to play a central role in development by regulating cell fate decisions. To date, four Notch homologs have been identified in mammals and have been designated Notch 1, Notch 2, Notch 3 and Notch 4. The Notch genes are expressed in a variety of tissues in both the embryonic and adult organism, suggesting that the genes are involved in multiple signaling pathways. The Notch proteins have been found to be overexpressed or rearranged in human tumors. Ligands for Notch include Jagged, Jagged2 and Delta. Jagged can activate Notch and prevent myoblast differentiation by inhibiting the expression of muscle regulatory and structural genes. Jagged2 is thought to be involved in the development of various tissues whose development is dependent upon epithelial-mesenchymal interactions. Normal Delta expression is restricted to the adrenal gland and placenta. Delta expression has also been found in neuroendocrine tumors such as neuroblastomas and pheochromocytomas.

REFERENCES

1. Weinmaster, G., et al. 1992. Notch 2: a second mammalian Notch gene. Development 116: 931-941.
2. Laborda, J., et al. 1993. DLK, a putative mammalian homeotic gene differentially expressed in small cell lung carcinomas and neuroendocrine tumor cell line. J. Biol. Chem. 268: 3817-3820.

CHROMOSOMAL LOCATION

Genetic locus: NOTCH3 (human) mapping to 19p13.12.

PRODUCT

Notch 3 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 Notch 3 shRNA Plasmid (h): sc-37135-SH and Notch 3 shRNA (h) Lentiviral Particles: sc-37135-V as alternate gene silencing products.

For independent verification of Notch 3 (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-37135A, sc-37135B and sc-37135C.

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

Notch 3 siRNA (h) is recommended for the inhibition of Notch 3 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

Notch 3 (A-6): sc-515825 is recommended as a control antibody for monitoring of Notch 3 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Notch 3 gene expression knockdown using RT-PCR Primer: Notch 3 (h)-PR: sc-37135-PR (20 µl, 536 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cohen, B., et al. 2010. Cyclin D1 is a direct target of JAG1-mediated Notch signaling in breast cancer. Breast Cancer Res. Treat. 123: 113-124.
2. Zhou, L., et al. 2013. The significance of Notch 1 compared with Notch 3 in high metastasis and poor overall survival in hepatocellular carcinoma. PLoS ONE 8: e57382.
3. Capaccione, K.M., et al. 2014. Sox9 mediates Notch 1-induced mesenchymal features in lung adenocarcinoma. Oncotarget 5: 3636-3650.
4. Jaskula-Sztul, R., et al. 2015. Tumor-suppressor role of Notch 3 in medullary thyroid carcinoma revealed by genetic and pharmacological induction. Mol. Cancer Ther. 14: 499-512.
5. Zhou, J.X., et al. 2016. Association between high levels of Notch 3 expression and high invasion and poor overall survival rates in pancreatic ductal adenocarcinoma. Oncol. Rep. 36: 2893-2901.
6. Somnay, Y.R., et al. 2017. Notch 3 expression correlates with thyroid cancer differentiation, induces apoptosis, and predicts disease prognosis. Cancer 123: 769-782.
7. Ferrandino, F., et al. 2018. Intrathymic Notch 3 and CXCR4 combinatorial interplay facilitates T-cell leukemia propagation. Oncogene 37: 6285-6298.
8. Giuli, M.V., et al. 2020. Notch 3 contributes to T-cell leukemia growth via regulation of the unfolded protein response. Oncogenesis 9: 93.

RESEARCH USE

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