

Notch 1 siRNA (h2): sc-44226

BACKGROUND

The LIN-12/Notch transmembrane receptors are believed to play a central role in development by regulating cell fate decisions. Four Notch homologs (Notch 1, Notch 2, Notch 3 and Notch 4) have been identified in mammals. The Notch genes are expressed in a variety of embryonic and adult tissues, suggesting that the genes are involved in multiple signaling pathways. Notch proteins have been found to be overexpressed or rearranged in human tumors. Ligands for Notch include Jagged1, Jagged2 and Delta. Jagged1 can activate Notch and prevent myoblast differentiation by inhibiting the expression of muscle regulatory and structural genes. Jagged2 may be involved in tissue development that is dependent upon epithelial-mesenchymal interactions. In addition to its normal expression in the adrenal gland and placenta, Delta expression has also been found in neuroendocrine tumors.

CHROMOSOMAL LOCATION

Genetic locus: NOTCH1 (human) mapping to 9q34.3.

PRODUCT

Notch 1 siRNA (h2) 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 Notch 1 shRNA Plasmid (h2): sc-44226-SH and Notch 1 shRNA (h2) Lentiviral Particles: sc-44226-V as alternate gene silencing products.

For independent verification of Notch 1 (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44226A, sc-44226B and sc-44226C.

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

Notch 1 siRNA (h2) is recommended for the inhibition of Notch 1 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 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.

GENE EXPRESSION MONITORING

Notch 1 (A-8): sc-376403 is recommended as a control antibody for monitoring of Notch 1 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 1 gene expression knockdown using RT-PCR Primer: Notch 1 (h2)-PR: sc-44226-PR (20 μ l, 467 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Greenblatt, D.Y., et al. 2007. Valproic acid activates Notch-1 signaling and regulates the neuroendocrine phenotype in carcinoid cancer cells. *Oncologist* 12: 942-951.
- Ning, L., et al. 2008. Suberoyl bis-hydroxamic acid activates Notch-1 signaling and induces apoptosis in medullary thyroid carcinoma cells. *Oncologist* 13: 98-104.
- Meng, R.D., et al. 2009. γ -secretase inhibitors abrogate oxaliplatin-induced activation of the Notch-1 signaling pathway in colon cancer cells resulting in enhanced chemosensitivity. *Cancer Res.* 69: 573-582.
- Ning, L., et al. 2009. Down-regulation of Notch1 signaling inhibits tumor growth in human hepatocellular carcinoma. *Am. J. Transl. Res.* 1: 358-366.
- Rose, S.L., et al. 2010. Notch 1 signaling is active in ovarian cancer. *Gynecol. Oncol.* 117: 130-133.
- Pinchot, S.N., et al. 2011. Identification and validation of Notch pathway activating compounds through a novel high-throughput screening method. *Cancer* 117: 1386-1398.
- Zhen-Jun, S., et al. 2012. β , β -dimethylacrylshikonin exerts antitumor activity via Notch-1 signaling pathway *in vitro* and *in vivo*. *Biochem. Pharmacol.* 84: 507-512.
- Ou, J.P., et al. 2012. Potential therapeutic role of Z-isochailulactone in lung cancer through induction of apoptosis via Notch signaling. *Evid. Based Complement. Alternat. Med.* 2012: 809204.
- Xie, M., et al. 2013. Notch 1 contributes to epidermal growth factor receptor tyrosine kinase inhibitor acquired resistance in non-small cell lung cancer *in vitro* and *in vivo*. *Eur. J. Cancer* 49: 3559-3572.

RESEARCH USE

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

PROTOCOLS

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