

Notch 1 siRNA (m): sc-36096

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.

REFERENCES

1. Weinmaster, G., et al. 1992. Notch 2: a second mammalian Notch gene. *Development* 116: 931-941.
2. Kopan, R., et al. 1993. Mouse Notch: expression in hair follicles correlates with cell fate determination. *J. Cell Biol.* 121: 631-641.
3. 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: Notch1 (mouse) mapping to 2 A3.

PRODUCT

Notch 1 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 Notch 1 shRNA Plasmid (m): sc-36096-SH and Notch 1 shRNA (m) Lentiviral Particles: sc-36096-V as alternate gene silencing products.

For independent verification of Notch 1 (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-36096A, sc-36096B and sc-36096C.

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 (m) is recommended for the inhibition of Notch 1 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.

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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Notch 1 gene expression knockdown using RT-PCR Primer: Notch 1 (m)-PR: sc-36096-PR (20 μ l, 529 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ishimura, N., et al. 2005. Inducible nitric oxide synthase up-regulates Notch-1 in mouse cholangiocytes: implications for carcinogenesis. *Gastroenterology* 128: 1354-1368.
2. Elias, S., et al. 2010. Notch-1 stimulates survival of lung adenocarcinoma cells during hypoxia by activating the IGF-1R pathway. *Oncogene* 29: 2488-2498.
3. Qin, X., et al. 2011. Notch signaling protects retina from nuclear factor- κ B- and poly-ADP-ribose-polymerase-mediated apoptosis under high-glucose stimulation. *Acta Biochim. Biophys. Sin.* 43: 703-711.
4. Jiang, L., et al. 2017. Blockade of Notch signaling promotes acetaminophen-induced liver injury. *Immunol. Res.* 65: 739-749.
5. Zhu, Q., et al. 2017. Phosphatase and tensin homolog- β -catenin signaling modulates regulatory T cells and inflammatory responses in mouse liver ischemia/reperfusion injury. *Liver Transpl.* 23: 813-825.

RESEARCH USE

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