

Jagged1 siRNA (h2): sc-44335

BACKGROUND

The LIN-12/Notch family of transmembrane receptors is believed to play a central role in development by regulating cell fate decisions. Ligands for Notch include Jagged1, Jagged2 and Delta. Jagged is a membrane protein and can activate Notch and prevent myoblast differentiation by inhibiting the expression of muscle regulatory and structural genes. It is involved in mammalian cardiovascular development and in cell fate decisions during hematopoiesis. Jagged is expressed in adult and fetal tissues, and expression is upregulated in cervical squamous cell carcinoma. Familial tetralogy of Fallot, the most common form of complex congenital heart disease, is caused by a mutation in the Jagged1 gene.

REFERENCES

1. 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.
2. Simpson, P. 1994. *The Notch receptors.* Austin, TX: R.G. Landes Company.
3. Lindsell, C.E., et al. 1995. Jagged: a mammalian ligand that activates Notch1. *Cell* 80: 909-917.
4. Valsecchi, C., et al. 1997. Jagged2: a putative Notch ligand expressed in the apical ectodermal ridge and in sites of epithelial-mesenchymal interactions. *Mech. Dev.* 69: 203-207.
5. Crosnier, C., et al. 2001. Fifteen novel mutations in the Jagged1 gene of patients with Alagille syndrome. *Hum. Mutat.* 17: 72-73.
6. Eldadah, Z.A., et al. 2001. Familial Tetralogy of Fallot caused by mutation in the Jagged1 gene. *Hum. Mol. Genet.* 10: 163-169.

CHROMOSOMAL LOCATION

Genetic locus: JAG1 (human) mapping to 20p12.2.

PRODUCT

Jagged1 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 Jagged1 shRNA Plasmid (h2): sc-44335-SH and Jagged1 shRNA (h2) Lentiviral Particles: sc-44335-V as alternate gene silencing products.

For independent verification of Jagged1 (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-44335A, sc-44335B and sc-44335C.

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

Jagged1 siRNA (h2) is recommended for the inhibition of Jagged1 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

Jagged1 (E-12): sc-390177 is recommended as a control antibody for monitoring of Jagged1 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 MarkerTM 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 Jagged1 gene expression knockdown using RT-PCR Primer: Jagged1 (h2)-PR: sc-44335-PR (20 μ l). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

SELECT PRODUCT CITATIONS

1. 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.
2. 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.

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.