

connexin 40.1 siRNA (h): sc-90537

BACKGROUND

The connexin family of proteins form hexameric complexes called connexons that facilitate movement of low molecular weight proteins between cells via gap junctions. Connexin proteins share a common topology of four transmembrane α -helical domains, two extracellular loops, a cytoplasmic loop and cytoplasmic N- and C-termini. Many of the key functional differences between connexins arise from specific amino-acid substitutions in the most highly conserved domains: the transmembrane and extracellular regions. Connexin 40.1, also known as GJD4 (gap junction protein, δ 4, 40.1kDa) or CX40.1, is a 370 amino acid multi-pass membrane protein that localizes to the cell junction and is expressed in liver, heart, kidney, pancreas, placenta and skeletal muscle. Existing as a component of hexameric connexin complexes, connexin 40.1 helps to facilitate the diffusion of low molecular weight proteins from one cell to another cell.

REFERENCES

1. Söhl, G., et al. 2003. Expression profiles of the novel human connexin genes hCx30.2, hCx40.1, and hCx62 differ from their putative mouse orthologues. *Cell Commun. Adhes.* 10: 27-36.
2. Söhl, G., et al. 2003. An update on connexin genes and their nomenclature in mouse and man. *Cell Commun. Adhes.* 10: 173-180.
3. Delmar, M. 2003. Gap junction remodeling in the failing heart: different connexins—different message? *J. Cardiovasc. Electrophysiol.* 14: 1213-1214.
4. Li, J., et al. 2005. Cardiac-specific loss of N-cadherin leads to alteration in connexins with conduction slowing and arrhythmogenesis. *Circ. Res.* 97: 474-481.
5. Duigou, G.J., et al. 2005. Replication-competent adenovirus formation in 293 cells: the recombination-based rate is influenced by structure and location of the transgene cassette and not increased by overproduction of HsRad51, Rad51-interacting, or E2F family proteins. *J. Virol.* 79: 5437-5444.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 611922. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: GJD4 (human) mapping to 10p11.21.

PRODUCT

connexin 40.1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see connexin 40.1 shRNA Plasmid (h): sc-90537-SH and connexin 40.1 shRNA (h) Lentiviral Particles: sc-90537-V as alternate gene silencing products.

For independent verification of connexin 40.1 (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-90537A, sc-90537B and sc-90537C.

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

connexin 40.1 siRNA (h) is recommended for the inhibition of connexin 40.1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor connexin 40.1 gene expression knockdown using RT-PCR Primer: connexin 40.1 (h)-PR: sc-90537-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.