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SANTA CRUZ BIOTECHNOLOGY, INC.

connexin 37 siRNA (h): sc-43694

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-termini and C-termini. Many of the key functional differences arise from specific amino-acid substitutions in the most highly conserved domains, the transmembrane and extracellular regions. Each of the approximately 20 connexin isoforms produces channels with distinct permeabilities and electrical and chemical sensitivities; therefore, one connexin usually cannot fully substitute for another. Consequently, a wide variety of malignant phenotypes associate with decreased connexin expression and gap junction communication, dependent on the particular connexin that is effected. For example, connexin 37, while expressed in the cardiac endothelium, does not exhibit downregulation associated with heart failure, as is the case with other cardiac connexins.

REFERENCES

1. Manjunath, C.K., et al. 1987. Human cardiac gap junctions: isolation, ultrastructure, and protein composition. J. Mol. Cell. Cardiol. 19: 131-134.
2. Grossman, H.B., et al. 1994. Decreased connexion expression and intercellular communication in human bladder cancer cells. Cancer Res. 54: 3062-3065.
3. Boerma, M., et al. 1999. A genetic polymorphism in connexin 37 as a prognostic marker for atherosclerotic plaque development. J. Intern. Med. 246: 211-218.
4. Harris, A.L. 2001. Emerging issues of connexin channels: biophysics fills the gap. Q. Rev. Biophys. 34: 325-472.
5. Dupont., E., et al. 2001. Altered connexin expression in human congestive heart failure. J. Mol. Cell. Cardiol. 33: 359-371.

CHROMOSOMAL LOCATION

Genetic locus: GJA4 (human) mapping to 1p34.3.

PRODUCT

connexin 37 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 connexin 37 shRNA Plasmid (h): sc-43694-SH and connexin 37 shRNA (h) Lentiviral Particles: sc-43694-V as alternate gene silencing products.

For independent verification of connexin 37 (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-43694A, sc-43694B and sc-43694C.

PROTOCOLS

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

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

connexin 37 siRNA (h) is recommended for the inhibition of connexin 37 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor connexin 37 gene expression knockdown using RT-PCR Primer: connexin 37 (h)-PR: sc-43694-PR (20 µl). 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.