SANTA CRUZ BIOTECHNOLOGY, INC.

connexin 31.9 siRNA (h): sc-93706

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 arise from specific amino acid substitutions in the most highly conserved domains; the transmembrane and extracellular regions. Connexin 31.9, also known as GJD3 (gap junction δ-3 protein), is a 294 amino acid protein that interacts with ZO-1, a tight junction protein. Connexin 31.9 is expressed in heart, brain, kidney, spleen, lung, testis, colon and vascular smooth muscle cells. There are two isoforms of connexin 31.9 that are produced as a result of alternative splicing events.

REFERENCES

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2. Nielsen, P.A., et al. 2002. Molecular cloning, functional expression, and tissue distribution of a novel human gap junction-forming protein, connexin-31.9. Interaction with zona occludens protein-1. J. Biol. Chem. 277: 38272-38283.
3. Nielsen, P.A. and Kumar, N.M. 2003. Differences in expression patterns between mouse connexin-30.2 (Cx30.2) and its putative human orthologue, connexin-31.9. FEBS Lett. 540: 151-156.
4. Miquerol, L., et al. 2003. Gap junctional connexins in the developing mouse cardiac conduction system. Novartis Found. Symp. 250: 80-98.
5. Cruciani, V. and Mikalsen, S.O. 2005. The connexin gene family in mammals. Biol. Chem. 386: 325-332.
6. Bukauskas, F.F., et al. 2006. Properties of mouse connexin 30.2 and human connexin 31.9 hemichannels: implications for atrioventricular conduction in the heart. Proc. Natl. Acad. Sci. USA 103: 9726-9731.

CHROMOSOMAL LOCATION

Genetic locus: GJD3 (human) mapping to 17q21.2.

PRODUCT

connexin 31.9 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 31.9 shRNA Plasmid (h): sc-93706-SH and connexin 31.9 shRNA (h) Lentiviral Particles: sc-93706-V as alternate gene silencing products.

For independent verification of connexin 31.9 (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-93706A, sc-93706B and sc-93706C.

RESEARCH USE

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

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 31.9 siRNA (h) is recommended for the inhibition of connexin 31.9 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 31.9 gene expression knockdown using RT-PCR Primer: connexin 31.9 (h)-PR: sc-93706-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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