SANTA CRUZ BIOTECHNOLOGY, INC.

connexin 47 siRNA (h): sc-105232

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Gap junctions are formed by a hexameric group of proteins called connexins for the transport of low molecular weight proteins. Connexins are present in all metazoan organisms, where they serve diverse functions, ranging from control of cell growth and differentiation to electric conduction in excitable tissues. Several mammalian cells with malignant phenotypes exhibit decreased connexin expression and gap junction communication. Connexin 47 is primarily expressed in the oligodendrocytes of highly myelinated CNS tissues and in a few calcium-binding protein S-100 β subunit-positive cells, but not in neurons or peripheral sciatic nerve. Connexin 47 is co-localized in many gap junction plaques on oligodendrocyte somata, particularly in gray matter.

REFERENCES

1. Odermatt, B., Wellershaus, K., Wallraff, A., Seifert, G., Degen, J., Euwens, C., Fuss, B., Büssow, H., Schilling, K., Steinhäuser, C. and Willecke, K. 2003. Connexin 47 (Cx47)-deficient mice with enhanced green fluorescent protein reporter gene reveal predominant oligodendrocytic expression of Cx47 and display vacuolized myelin in the CNS. J. Neurosci. 23: 4549-4559.
2. Kleopa, K.A., Orthmann, J.L., Enriquez, A., Paul, D.L. and Scherer, S.S. 2004. Unique distributions of the gap junction proteins connexin 29, connexin 32, and connexin 47 in oligodendrocytes. Glia 47: 346-357.
3. Kamasawa, N., Sik, A., Morita, M., Yasumura, T., Davidson, K.G., Nagy, J.I. and Rash, J.E. 2005. Connexin 47 and connexin 32 in gap junctions of oligodendrocyte somata, myelin sheaths, paranodal loops and Schmidt-Lanterman incisures: implications for ionic homeostasis and potassium siphoning. Neuroscience 136: 65-86.

CHROMOSOMAL LOCATION

Genetic locus: GJC2 (human) mapping to 1q42.13.

PRODUCT

connexin 47 siRNA (h) is a pool of 2 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 47 shRNA Plasmid (h): sc-105232-SH and connexin 47 shRNA (h) Lentiviral Particles: sc-105232-V as alternate gene silencing products.

For independent verification of connexin 47 (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-105232A and sc-105232B.

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 47 siRNA (h) is recommended for the inhibition of connexin 47 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.

GENE EXPRESSION MONITORING

connexin 47 (391CT6.4.3): sc-517325 is recommended as a control antibody for monitoring of connexin 47 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor connexin 47 gene expression knockdown using RT-PCR Primer: connexin 47 (h)-PR: sc-105232-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.

PROTOCOLS

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