SANTA CRUZ BIOTECHNOLOGY, INC.

galectin-1 siRNA (h): sc-35441

BACKGROUND

Galectins are a family of soluble β-galactoside-binding animal lectins that modulate cell-to-cell adhesion and cell-to-extracellular matrix (ECM) interactions and play a role in tumor progression, pre-mRNA splicing and apoptosis. Specifically, galectin-1 is an autocrine regulator of cell proliferation that plays a role in the maintenance of G_0 and in the control of G_2 traverse. Galectin-1, also known as LGALS1, is the protein product of a single gene linked to human chromosome 22q13.1. The galectin-1 protein contains 135 amino acids, a single internal EcoRI site and a polyadenylation signal. Galectin-1 can localize to both intracellular and extracellular space. Galectin-1 is expressed in human placenta, human lung, HL-6, Hep G2 and CEM cells.

CHROMOSOMAL LOCATION

Genetic locus: LGALS1 (human) mapping to 22q13.1.

PRODUCT

galectin-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see galectin-1 shRNA Plasmid (h): sc-35441-SH and galectin-1 shRNA (h) Lentiviral Particles: sc-35441-V as alternate gene silencing products.

For independent verification of galectin-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-35441A, sc-35441B and sc-35441C.

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

galectin-1 siRNA (h) is recommended for the inhibition of galectin-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 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

galectin-1 (C-8): sc-166618 is recommended as a control antibody for monitoring of galectin-1 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 galectin-1 gene expression knockdown using RT-PCR Primer: galectin-1 (h)-PR: sc-35441-PR (20 µl, 284 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Norling, L.V., et al. 2007. Inhibitory control of endothelial galectin-1 on *in vitro* and *in vivo* lymphocyte trafficking. FASEB J. 22: 682-690.
2. Puchades, M., et al. 2007. Proteomic investigation of glioblastoma cell lines treated with wild-type p53 and cytotoxic chemotherapy demonstrates an association between galectin-1 and p53 expression. J. Proteome Res. 6: 869-875.
3. Cooper, D., et al. 2008. Novel insights into the inhibitory effects of galectin-1 on neutrophil recruitment under flow. J. Leukoc. Biol. 83: 1459-1466.
4. Espelt, M.V., et al. 2011. Novel roles of galectin-1 in hepatocellular carcinoma cell adhesion, polarization, and *in vivo* tumor growth. Hepatology 53: 2097-2106.
5. Satelli, A., et al. 2011. Galectin-1 is silenced by promoter hypermethylation and its re-expression induces apoptosis in human colorectal cancer cells. Cancer Lett. 301: 38-46.
6. He, X.J., et al. 2014. Expression of galectin-1 in carcinoma-associated fibroblasts promotes gastric cancer cell invasion through upregulation of Integrin β1. Cancer Sci. 105: 1402-1410.
7. Petropolis, D.B., et al. 2014. A new human 3D-liver model unravels the role of galectins in liver infection by the parasite *Entamoeba histolytica*. PLoS Pathog. 10: e1004381.
8. Albrethsen, J., et al. 2014. Proteomics of cancer cell lines resistant to microtubule-stabilizing agents. Mol. Cancer Ther. 13: 260-269.
9. Bacigalupo, M.L., et al. 2015. Galectin-1 triggers epithelial-mesenchymal transition in human hepatocellular carcinoma cells. J. Cell. Physiol. 230: 1298-1309.
10. Fritsch, K., et al. 2016. Galectin-3 interacts with components of the nuclear ribonucleoprotein complex. BMC Cancer 16: 502.

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.