

galectin-7 siRNA (h): sc-44534

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. Galectin-7, expressed mainly in stratified squamous epithelium, is activated by p53 and repressed by retinoic acid. It is a pro-apoptotic protein that functions intracellularly upstream of JNK activation and cytochrome c release. The galectin-7 gene maps to chromosome 19q13.2.

REFERENCES

1. Couraud, P.O., et al. 1989. Molecular cloning, characterization and expression of a human 14 kDa lectin. *J. Biol. Chem.* 264: 1310-1316.
2. Hirabayashi, J., et al. 1989. Cloning and nucleotide sequence of a full-length cDNA for human 14 kDa β -galactoside-binding lectin. *Biochim. Biophys. Acta* 1008: 85-91.
3. Madsen, P., et al. 1995. Cloning, expression and chromosome mapping of human galectin-7. *J. Biol. Chem.* 270: 5823-5829.
4. Magnaldo, T., et al. 1995. Galectin-7, a human 14 kDa S-lectin, specifically expressed in keratinocytes and sensitive to retinoic acid. *Dev. Biol.* 168: 259-271.
5. Magnaldo, T., et al. 1998. Galectin-7, a marker of all types of stratified epithelia. *Differentiation* 63: 159-168.
6. Leonidas, D.D., et al. 1998. Structural basis for the recognition of carbohydrates by human galectin-7. *Biochemistry* 37: 13930-13940.

CHROMOSOMAL LOCATION

Genetic locus: LGALS7 (human) mapping to 19q13.2.

PRODUCT

galectin-7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see galectin-7 shRNA Plasmid (h): sc-44534-SH and galectin-7 shRNA (h) Lentiviral Particles: sc-44534-V as alternate gene silencing products.

For independent verification of galectin-7 (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-44534A and sc-44534B.

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

galectin-7 siRNA (h) is recommended for the inhibition of galectin-7 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.

GENE EXPRESSION MONITORING

galectin-7 (G-3): sc-137085 is recommended as a control antibody for monitoring of galectin-7 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor galectin-7 gene expression knockdown using RT-PCR Primer: galectin-7 (h)-PR: sc-44534-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Labrie, M., et al. 2014. Expression and functions of galectin-7 in ovarian cancer. *Oncotarget* 5: 7705-7721.
2. Guo, J.P. and Li, X.G. 2017. Galectin-7 promotes the invasiveness of human oral squamous cell carcinoma cells via activation of ERK and JNK signaling. *Oncol. Lett.* 13: 1919-1924.
3. Sun, X., et al. 2022. CCCTC-binding factor transcriptionally regulates galectin-7 and activates the JNK/STAT3 axis to aggravate bronchial epithelial cell injury. *Pediatr. Pulmonol.* 57: 90-99.

RESEARCH USE

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