SANTA CRUZ BIOTECHNOLOGY, INC.

galectin-3 siRNA (m): sc-35443

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. The galectin-3 protein, also known as Mac-2, hMac-2, GALBP, CBP35 or LGALS3, contains a single carbohydrate binding domain, which binds galactose-containing glycoconjugates. galectin-3 is expressed in colonic and intestinal epithelium, inflammatory macrophages, papillary and follicular carcinomas, neoplastic astrocytes and some B and T lymphocytes. Upregulated expression of galectin-3 is involved in cancer progression and metastasis. galectin-3 mediates the endocytosis of β1 integrins in a lactose-dependent manner and is associated with thyroid malignancy and Crohn's disease. It may also be used as a marker for diagnosing cases involving Hurthle cell adenomas and carcinomas.

REFERENCES

1. Huflejt, M.E., et al. 1997. Strikingly different localization of galectin-3 and galectin-4 in human colon adenocarcinoma T84 cells. Galectin-4 is localized at sites of cell adhesion. J. Biol. Chem. 272: 14294-14303.
2. Shimonishi, T., et al. 2001. Expression of endogenous galectin-1 and galectin-3 in intrahepatic cholangiocarcinoma. Hum. Pathol. 32: 302-310.
3. Guittaut, M., et al. 2001. Identification of an internal gene to the human galectin-3. J. Biol. Chem. 276: 2652-2667.
4. Jensen-Jarolim, E., et al. 2001. Anti-galectin-3 IgG autoantibodies in patients with Crohn's disease characterized by means of phage display peptide libraries. J. Clin. Immunol. 21: 348-356.

CHROMOSOMAL LOCATION

Genetic locus: Lgals3 (mouse) mapping to 14 C1.

PRODUCT

galectin-3 siRNA (m) 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-3 shRNA Plasmid (m): sc-35443-SH and galectin-3 shRNA (m) Lentiviral Particles: sc-35443-V as alternate gene silencing products.

For independent verification of galectin-3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35443A, sc-35443B and sc-35443C.

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-3 siRNA (m) is recommended for the inhibition of galectin-3 expression in mouse 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-3 (B2C10): sc-32790 is recommended as a control antibody for monitoring of galectin-3 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-3 gene expression knockdown using RT-PCR Primer: galectin-3 (m)-PR: sc-35443-PR (20 µl, 464 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lin, Y.H., et al. 2014. Aldosterone induced galectin-3 secretion *in vitro* and *in vivo:* from cells to humans. PLoS ONE 9: e95254.
2. Zhang, H., et al. 2014. galectin-3 as a marker and potential therapeutic target in breast cancer. PLoS ONE 9: e103482.
3. Serizawa, N., et al. 2015. galectin-3 regulates HCC cell invasion by RhoA and MLCK activation. Lab. Invest. 95: 1145-1156.
4. da Silva, A.A., et al. 2017. galectin-3: a friend but not a foe during *Trypanosoma cruzi* experimental infection. Front. Cell. Infect. Microbiol. 7: 463.
5. Nomura, K., et al. 2017. Activated microglia desialylate and phagocytose cells via neuraminidase, galectin-3, and Mer tyrosine kinase. J. Immunol. 198: 4792-4801.
6. Wang, C., et al. 2019. Berberine inhibits adipocyte differentiation, proliferation and adiposity through down-regulating galectin-3. Sci. Rep. 9: 13415.
7. Gu, J., et al. 2021. galectin-3 contributes to the inhibitory effect of Iα,25-$(OH)_2D_3$ on osteoclastogenesis. Int. J. Mol. Sci. 22: 13334.

RESEARCH USE

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