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# galectin-3 siRNA (h): sc-155994

## BACKGROUND

Galectins are a family of soluble  $\beta$ -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  $\beta$ 1 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.

## CHROMOSOMAL LOCATION

Genetic locus: LGALS3 (human) mapping to 14q22.3.

## PRODUCT

galectin-3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see galectin-3 shRNA Plasmid (h): sc-155994-SH and galectin-3 shRNA (h) Lentiviral Particles: sc-155994-V as alternate gene silencing products.

For independent verification of galectin-3 (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-155994A, sc-155994B and sc-155994C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

galectin-3 siRNA (h) is recommended for the inhibition of galectin-3 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  $\mu$ M in 66  $\mu$ 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-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 (h)-PR: sc-155994-PR (20  $\mu$ l, 483 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## SELECT PRODUCT CITATIONS

1. Chen, X., et al. 2014. Autophagy induced by calcium phosphate precipitates targets damaged endosomes. *J. Biol. Chem.* 289: 11162-11174.
2. Liu, J., et al. 2014. Vascular endothelial growth factor C enhances cervical cancer cell invasiveness via upregulation of galectin-3 protein. *Gynecol. Endocrinol.* 30: 461-465.
3. Lin, Y.H., et al. 2014. Aldosterone induced galectin-3 secretion *in vitro* and *in vivo*: from cells to humans. *PLoS ONE* 9: e95254.
4. Lee, K.M., et al. 2015. ECM1 regulates tumor metastasis and CSC-like property through stabilization of  $\beta$ -catenin. *Oncogene* 34: 6055-6065.
5. Wu, S.Y., et al. 2017. Cell intrinsic Galectin-3 attenuates neutrophil Ros-dependent killing of candida by modulating CR3 downstream Syk activation. *Front. Immunol.* 8: 48.
6. Szychowski, K.A., et al. 2019. Antiproliferative effect of elastin-derived peptide VGVAPG on SH-SY5Y neuroblastoma cells. *Neurotox. Res.* 36: 503-514.
7. Schöll-Naderer, M., et al. 2019. Plant-derived saccharides and their inhibitory potential on metastasis associated cellular processes of pancreatic ductal adenocarcinoma cells. *Carbohydr. Res.* 490: 107903.

## RESEARCH USE

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