

# Integrin $\alpha$ 9 siRNA (h): sc-75340

## BACKGROUND

Integrin  $\alpha$ 9 (Integrin  $\alpha$ RLC) is a 1,035 amino acid protein encoded by the human gene ITGA9. Integrin  $\alpha$ 9 belongs to the Integrin  $\alpha$  chain family and contains seven FG-GAP repeats. Integrins are a large family of cell surface glycoproteins that mediate cell-cell adhesion and cell-matrix adhesion. They are heterodimers composed of an  $\alpha$  and a  $\beta$  subunit bound noncovalently to each other. The  $\alpha$  subunits contain a large N-terminal extracellular domain with seven conserved repeats of putative metal binding domains, a trans-membrane segment and a short C-terminal cytoplasmic tail. Integrin  $\alpha$ 9 is single-pass type I membrane protein found in airway epithelium, the basal layer of squamous epithelium, smooth muscle, skeletal muscle and hepatocytes as a heterodimer of an  $\alpha$  and a  $\beta$  subunit.

## REFERENCES

1. Yamakawa, K., et al. 1993. Frequent homozygous deletions in lung cancer cell lines detected by a DNA marker located at 3p21.3-p22. *Oncogene* 8: 327-330.
2. Palmer, E.L., et al. 1994. Sequence and tissue distribution of the Integrin  $\alpha$ 9 subunit, a novel partner of  $\beta$ 1 that is widely distributed in epithelia and muscle. *J. Cell Biol.* 123: 1289-1297.
3. Daigo, Y., et al. 1999. Characterization of a 1200-kb genomic segment of chromosome 3p22-p21.3. *DNA Res.* 6: 37-44.
4. Rao, H., et al. 2006.  $\alpha$ 9/ $\beta$ 1: a novel osteoclast integrin that regulates osteoclast formation and function. *J. Bone Miner. Res.* 21: 1657-1665.
5. Gulubova, M.V. and Vlaykova, T.I. 2006. Significance of Tenascin-C, Fibronectin, Laminin, Collagen IV,  $\alpha$ 5/ $\beta$ 1 and  $\alpha$ 9/ $\beta$ 1 integrins and fibrotic capsule formation around liver metastases originating from cancers of the digestive tract. *Neoplasma* 53: 372-383.
6. Chen, C., et al. 2006. The Integrin  $\alpha$ 9/ $\beta$ 1 contributes to granulopoiesis by enhancing granulocyte colony-stimulating factor receptor signaling. *Immunity* 25: 895-906.

## CHROMOSOMAL LOCATION

Genetic locus: ITGA9 (human) mapping to 3p22.2.

## PRODUCT

Integrin  $\alpha$ 9 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 Integrin  $\alpha$ 9 shRNA Plasmid (h): sc-75340-SH and Integrin  $\alpha$ 9 shRNA (h) Lentiviral Particles: sc-75340-V as alternate gene silencing products.

For independent verification of Integrin  $\alpha$ 9 (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-75340A, sc-75340B and sc-75340C.

## RESEARCH USE

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

## 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  $\mu$ 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.

## APPLICATIONS

Integrin  $\alpha$ 9 siRNA (h) is recommended for the inhibition of Integrin  $\alpha$ 9 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Integrin  $\alpha$ 9 gene expression knockdown using RT-PCR Primer: Integrin  $\alpha$ 9 (h)-PR: sc-75340-PR (20  $\mu$ l, 479 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Sun, X., et al. 2014. The EDA-containing cellular fibronectin induces epithelial-mesenchymal transition in lung cancer cells through Integrin  $\alpha$ 9/ $\beta$ 1-mediated activation of PI3-K/AKT and Erk1/2. *Carcinogenesis* 35: 184-191.

## PROTOCOLS

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