

Integrin α 11 siRNA (h): sc-90047

BACKGROUND

Integrins are heterodimers composed of noncovalently associated transmembrane α and β subunits, which heterodimerize to produce more than 20 different receptors. Most Integrin receptors bind ligands that are components of the extracellular matrix, including Fibronectin, Collagen (COL) and Vitronectin. Certain Integrins can also bind to soluble ligands, such as Fibrinogen, or to counterreceptors on adjacent cells, such as the intracellular adhesion molecules (ICAMs), leading to cellular aggregation. Integrin α 11, also known as ITGA11 or MSTP018, is a 1,189 amino acid single-pass type I membrane protein that contains one VWFA domain and seven FG-GAP repeats. Expressed at high levels in heart and uterus and present at lower levels in pancreas, kidney, skeletal muscle, placenta, lung, colon and brain, Integrin α 11 exists as a heterodimer with Integrin β 1 and functions as a receptor for collagen.

REFERENCES

1. Lehnert, K., et al. 1999. Cloning, sequence analysis, and chromosomal localization of the novel human Integrin α 11 subunit (ITGA11). *Genomics* 60: 179-187.
2. Velling, T., et al. 1999. cDNA cloning and chromosomal localization of human α 11 Integrin. A collagen-binding, I domain-containing, β 1-associated Integrin α -chain present in muscle tissues. *J. Biol. Chem.* 274: 25735-25742.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604789. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: ITGA11 (human) mapping to 15q23.

PRODUCT

Integrin α 11 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Integrin α 11 shRNA Plasmid (h): sc-90047-SH and Integrin α 11 shRNA (h) Lentiviral Particles: sc-90047-V as alternate gene silencing products.

For independent verification of Integrin α 11 (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-90047A, sc-90047B and sc-90047C.

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

Integrin α 11 siRNA (h) is recommended for the inhibition of Integrin α 11 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

Integrin α 11 (F-5): sc-390091 is recommended as a control antibody for monitoring of Integrin α 11 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 Integrin α 11 gene expression knockdown using RT-PCR Primer: Integrin α 11 (h)-PR: sc-90047-PR (20 μ l, 512 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Moon, H.G., et al. 2014. CCN1 secretion and cleavage regulate the lung epithelial cell functions after cigarette smoke. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 307: L326-L337.

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.