SANTA CRUZ BIOTECHNOLOGY, INC.

Integrin α10 siRNA (h): sc-88849

BACKGROUND

Integrin α10 (Integrin α10/β1) is a member of the integrin α chain family that contains seven FG-GAP repeats and one VWFA domain. Integrin α10 is single-pass type 1 membrane protein and is expressed as a heterodimer of an α and a β subunit. Integrin α10 is a widely expressed protein with highest expression found in muscle and heart tissue but is also found in articular cartilage. The α10 subunit is part of a collagen type II-binding integrin found in chondrocytes. Disruption of Integrin α10 expression will lead to growth retardation and defects in the growth plate, and is characterized by a disturbed arrangement of chondrocytes, abnormal chondrocyte shape and reduced chondrocyte proliferation. AP-2ε and Ets-1 have been shown to be involved in the regulation of Integrin α10 transcription in chondrocytes. Integrin α10 is upregulated in malignant melanoma cell lines.

REFERENCES

1. Lehnert, K., et al. 1999. The integrin α10 subunit: expression pattern, partial gene structure, and chromosomal localization. Cytogenet. Cell Genet. 87: 238-244.
2. Bengtsson, T., et al. 2001. Characterization of the mouse integrin subunit α10 gene and comparison with its human homologue. Genomic structure, chromosomal localization and identification of splice variants. Matrix Biol. 20: 565-576.
3. Gullberg, D.E. and Lundgren-Akerlund, E. 2002. Collagen-binding I domain integrins—what do they do? Prog. Histochem. Cytochem. 37: 3-54.
4. Bengtsson, T., et al. 2005. Loss of α10β1 integrin expression leads to moderate dysfunction of growth plate chondrocytes. J. Cell Sci. 118: 929-936.
5. Wenke, A.K., et al. 2006. Regulation of integrin α10 expression in chondrocytes by the transcription factors AP-2ε and Ets-1. Biochem. Biophys. Res. Commun. 345: 495-501.
6. Farina, A., et al. 2006. Evidence of genetic underexpression in chorionic villi samples of euploid fetuses with increased nuchal translucency at 10-11 weeks' gestation. Prenat. Diagn. 26: 128-133.
7. Wenke, A.K., et al. 2007. Expression of integrin α10 is induced in malignant melanoma. Cell. Oncol. 29: 373-386.
8. Varas, L., et al. 2007. α10 integrin expression is up-regulated on fibroblast growth factor-2-treated mesenchymal stem cells with improved chondrogenic differentiation potential. Stem Cells Dev. 16: 965-978.

CHROMOSOMAL LOCATION

Genetic locus: ITGA10 (human) mapping to 1q21.1.

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.

PRODUCT

Integrin α10 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Integrin α10 shRNA Plasmid (h): sc-88849-SH and Integrin α10 shRNA (h) Lentiviral Particles: sc-88849-V as alternate gene silencing products.

For independent verification of Integrin α10 (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-88849A, sc-88849B and sc-88849C.

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

Integrin α10 siRNA (h) is recommended for the inhibition of Integrin α10 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Integrin α10 gene expression knockdown using RT-PCR Primer: Integrin α10 (h)-PR: sc-88849-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.