SANTA CRUZ BIOTECHNOLOGY, INC.

β ig-h3 siRNA (h): sc-43123

BACKGROUND

Human β ig-h3 (α3/β1 Integrin, keratoepithelin) is a secreted, 683 amino acid, transforming growth factor-inducible, extracellular matrix adhesion molecule. β ig-h3 contains an amino-terminal secretory sequence and a carboxy-terminal Integrin-binding Arg-Gly-Asp (RGD) domain. β ig-h3 is implicated in mechanisms leading to proliferation, differentiation, wound healing and morphogenesis of corneal tissues. Mutations in the β ig-h3 gene, along with elevated levels of β ig-h3 protein in human corneas, occurs with granular dystrophy (GCD) and other inherited disorders of the cornea. β ig-h3 is also a structural component of the human bladder extracellular matrix and may influence nuclear regulatory or structural functions.

REFERENCES

1. Skonier, J., Neubauer, M., Madisen, L., Bennett, K., Plowman, G.D. and Purchio, A.F. 1992. cDNA cloning and sequence analysis of β ig-h3, a novel gene induced in a human adenocarcinoma cell line after treatment with transforming growth factor β. DNA Cell Biol. 11: 511-522.
2. LeBaron, R.G., Bezverkov, K.I., Zimber, M.P., Pavelec, R., Skonier, J. and Purchio, A.F. 1995. β ig-h3, a novel secretory protein inducible by transforming growth factor β, is present in normal skin and promotes the adhesion and spreading of dermal fibroblasts *in vitro*. J. Invest. Dermatol. 104: 844-849.
3. Rawe, I.M., Zhan, Q., Burrows, R., Bennett, K. and Cintron, C. 1997. β-ig. Molecular cloning and *in situ* hybridization in corneal tissues. Invest. Ophthalmol. Vis. Sci. 38: 893-900.
4. Tsujikawa, M., Shimomura, Y., Okada, M., Yamamoto, S., Tano, Y. and Kurahashi, H. 1998. Novel polymorphisms in the β ig-h3 gene. J. Hum. Genet. 43: 214-225.
5. Bron, A.J. 2000. Genetics of the corneal dystrophies: what we have learned in the past twenty-five years. Cornea 19: 699-711.
6. Billings, P.C., Herrick, D.J., Kucich, U., Engelsberg, B.N., Abrams, W.R., Macarak, E.J., Rosenbloom, J. and Howard, P.S. 2000. Extracellular matrix and nuclear localization of β ig-h3 in human bladder smooth muscle and fibroblast cells. J. Cell. Biochem. 79: 261-273.

CHROMOSOMAL LOCATION

Genetic locus: TGFBI (human) mapping to 5q31.1.

PRODUCT

β ig-h3 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 β ig-h3 shRNA Plasmid (h): sc-43123-SH and β ig-h3 shRNA (h) Lentiviral Particles: sc-43123-V as alternate gene silencing products.

For independent verification of β ig-h3 (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-43123A, sc-43123B and sc-43123C.

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

β ig-h3 siRNA (h) is recommended for the inhibition of β ig-h3 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 β ig-h3 gene expression knockdown using RT-PCR Primer: β ig-h3 (h)-PR: sc-43123-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hung, M.S., Chen, I.C., You, L., Jablons, D.M., Li, Y.C., Mao, J.H., Xu, Z., Hsieh, M.J., Lin, Y.C., Yang, C.T., Liu, S.T. and Tsai, Y.H. 2015. Knockdown of Cul4A increases chemosensitivity to gemcitabine through upregulation of TGFBI in lung cancer cells. Oncol. Rep. 34: 3187-3195.

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.