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Cytokeratin 1 siRNA (h): sc-43285

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed as pairs in both keratinized and non-keratinized epithelial tissue. Cytokeratins constitute up to 85% of a mature keratinocytes in the vertebrate epidermis. Cytokeratins play a critical role in differentiation and tissue specialization, and they function to maintain the overall structural integrity of epithelial cells. The α -helical coiled-coil dimers associate laterally end-to-end to form 10 nm diameter filaments. Cytokeratins are useful markers of tissue differentiation and they aid in the characterization of malignant tumors. Cytokeratin 1 is highly expressed in several malignancies including epithelioid hemangioendotheliomas, angiosarcomas, schwannomas, epithelioid sarcomas and synodal sarcomas. The gene encoding human Cytokeratin 1 maps to chromosome 12q13.13. Mutations in the gene encoding human Cytokeratin 1 lead to abnormal filament associations and epidermolytic hyperkeratosis.

REFERENCES

1. Popescu, N.C., et al. 1989. Two type II keratin genes are localized on human chromosome 12. *Hum. Genet.* 82: 109-112.
2. van der Velden, L.A., et al. 1993. Cytokeratin expression in normal and (pre)malignant head and neck epithelia: an overview. *Head Neck* 15: 133-146.
3. Yang, J.M., et al. 1994. Mutations in the H1 and 1A domains in the keratin 1 gene in epidermolytic hyperkeratosis. *J. Invest. Dermatol.* 102: 17-23.
4. Marceau, N. and Loranger, A. 1995. Cytokeratin expression, fibrillar organization and subtle function in liver cells. *Biochem. Cell Biol.* 73: 619-625.

CHROMOSOMAL LOCATION

Genetic locus: KRT1 (human) mapping to 12q13.13.

PRODUCT

Cytokeratin 1 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 Cytokeratin 1 shRNA Plasmid (h): sc-43285-SH and Cytokeratin 1 shRNA (h) Lentiviral Particles: sc-43285-V as alternate gene silencing products.

For independent verification of Cytokeratin 1 (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-43285A, sc-43285B and sc-43285C.

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

Cytokeratin 1 siRNA (h) is recommended for the inhibition of Cytokeratin 1 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

Cytokeratin 1 (E-12): sc-376224 is recommended as a control antibody for monitoring of Cytokeratin 1 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 Cytokeratin 1 gene expression knockdown using RT-PCR Primer: Cytokeratin 1 (h)-PR: sc-43285-PR (20 μ l). 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. Petrosyan, A., et al. 2015. Keratin 1 plays a critical role in golgi localization of core 2 N-acetylglucosaminyltransferase M via interaction with its cytoplasmic tail. *J. Biol. Chem.* 290: 6256-6269.

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.