SANTA CRUZ BIOTECHNOLOGY, INC.

Cytokeratin 7 siRNA (m): sc-35155

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed as pairs in both keratinized and non-keratinized epithelial tissue, where they constitute up to 85% of mature keratinocytes in the vertebrate epidermis. Cytokeratins play a critical role in differentiation and tissue specialization and 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, in addition, they aid in the characterization of malignant tumors. Cytokeratin 7 (also known as sarcolectin) agglutinates normal and transformed cells with a high affinity for simple sugars. Cytokeratin 7 also inhibits the synthesis of interferon-dependent secondary proteins thus reversing the antiviral effect of interferon induction and restoring cells to their status ad primum. In normal and transformed cells, Cytokeratin 7 localizes to the membrane.

REFERENCES

1. Moll, R., et al. 1982. The catalog of human Cytokeratins: patterns of expression in normal epithelia, tumors and cultured cells. Cell 31: 11-24.
2. Lane, E.B., et al. 1985. Keratin antigens in differentiating skin. Ann. N.Y. Acad. Sci. 455241-455258.
3. Osborn, M., et al. 1986. Differential diagnosis of gastrointestinal carcinomas by using monoclonal antibodies specific for individual Keratin polypeptides. Lab. Invest. 55: 497-504.
4. Vojtesek, B., et al. 1990. A panel of monoclonal antibodies to Keratin no. 7: characterization and value in tumor diagnosis. Neoplasma 37: 333-342.
5. Ramaekers, F., et al. 1990. Use of monoclonal antibodies to Keratin 7 in the differential diagnosis of adenocarcinomas. Am. J. Pathol. 136: 641-655.
7. Bartek, J., et al. 1991. A series of 14 new monoclonal antibodies to Keratins: characterization and value in diagnostic histopathology. J. Pathol. 164: 215-224.
8. van Niekerk, C.C., et al. 1991. Immunohistochemical demonstration of Keratin 7 in routinely fixed paraffin-embedded human tissues. J. Pathol. 165: 145-152.

CHROMOSOMAL LOCATION

Genetic locus: Krt7 (mouse) mapping to 15 F2.

PRODUCT

Cytokeratin 7 siRNA (m) 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 Cytokeratin 7 shRNA Plasmid (m): sc-35155-SH and Cytokeratin 7 shRNA (m) Lentiviral Particles: sc-35155-V as alternate gene silencing products.

For independent verification of Cytokeratin 7 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35155A, sc-35155B and sc-35155C.

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

Cytokeratin 7 shRNA (m) Lentiviral Particles is recommended for the inhibition of Cytokeratin 7 expression in mouse 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.

GENE EXPRESSION MONITORING

Cytokeratin 7 (RCK105): sc-23876 is recommended as a control antibody for monitoring of Cytokeratin 7 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 7 gene expression knockdown using RT-PCR Primer: Cytokeratin 7 (m)-PR: sc-35155-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.