

Vimentin siRNA (r): sc-156015

BACKGROUND

Cytoskeletal intermediate filaments (IFs) constitute a diverse group of proteins that are expressed in a highly tissue-specific manner. Intermediate filaments are constructed from two-chain, α -helical, coiled-coil molecules arranged on an imperfect helical lattice and have been widely used as markers for distinguishing individual cell types within a tissue and identifying the origins of metastatic tumors. One such intermediate filament protein, Vimentin, is a general marker of cells originating in the mesenchyme. Vimentin is frequently coexpressed with other members of the intermediate filament family, such as the cytokeratins, in neoplasms including melanoma and breast carcinoma.

REFERENCES

1. Draberova, E., et al. 1986. A common antigenic determinant of Vimentin and Desmin defined by monoclonal antibody. *Folia Biol.* 32: 295-303.
2. Van Muijen, G.N., et al. 1987. Coexpression of intermediate filament polypeptides in human fetal and adult tissues. *Lab. Invest.* 57: 359-369.
3. Lukas, Z., et al. 1989. Expression of Vimentin and glial fibrillary acidic protein in human developing spinal cord. *Histochem. J.* 21: 693-701.
4. Lukas, Z., et al. 1993. Expression of phosphorylated high molecular weight neurofilament protein (NF-H) and Vimentin in human developing dorsal root ganglia and spinal cord. *Histochemistry* 100: 495-502.
5. Stewart, M. 1993. Intermediate filament structure and assembly. *Curr. Opin. Cell Biol.* 5: 3-11.
6. Parry, D.A. 1995. Hard α -keratin IF: a structural model lacking a head-to-tail molecular overlap but having hybrid features characteristic of both epidermal keratin and Vimentin IF. *Proteins* 22: 267-272.

CHROMOSOMAL LOCATION

Genetic locus: Vim (rat) mapping to 17q12.3.

PRODUCT

Vimentin siRNA (r) 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 Vimentin shRNA Plasmid (r): sc-156015-SH and Vimentin shRNA (r) Lentiviral Particles: sc-156015-V as alternate gene silencing products.

For independent verification of Vimentin (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-156015A, sc-156015B and sc-156015C.

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

Vimentin siRNA (r) is recommended for the inhibition of Vimentin expression in rat 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

Vimentin (E-5): sc-373717 is recommended as a control antibody for monitoring of Vimentin 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 Vimentin gene expression knockdown using RT-PCR Primer: Vimentin (r)-PR: sc-156015-PR (20 μ l, 546 bp). 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. Chang, I.A., et al. 2012. Vimentin phosphorylation by Cdc2 in Schwann cell controls axon growth via β 1-integrin activation. *FASEB J.* 26: 2401-2413.
2. Yu, Y.N., et al. 2020. The molecular evolutionary characteristics of new isolated H9N2 AIV from East China and the function of Vimentin on virus replication in MDCK cells. *Virology* 517: 78.

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.