

RBM38 siRNA (h): sc-76368

BACKGROUND

Damage to nuclear DNA can lead to unregulated cell division and ultimately the formation of a cancerous tumor. Recognition and repair of damaged DNA is initiated by proteins, such as p53, that regulate the cell cycle. p53 is a transcription factor that induces cell cycle arrest at the G₁/S regulation point when it functions to either activate repair proteins or initiate apoptosis. One protein induced by wildtype p53 is RBM38 (RNA-binding protein 38), also known as RNPC1 or SEB4. RBM38 is a cell cycle protein found in the cytosol and the nucleus that exists as two alternatively spliced isoforms, 1 (RNPC1a) and 2 (RNPC1b), of 239 and 121 amino acids, respectively. Independent of p53 expression, RBM38 isoform 1 induces cell cycle arrest in G₁ phase through maintaining transcript stability at the 3'-UTR of p21, a regulator of cell cycle progression at S phase. RBM38 is also an mRNA splicing factor that regulates the expression of FGFR2. RBM38 contains one RRM (RNA recognition motif) domain.

REFERENCES

1. Banks, L., et al. 1986. Isolation of human-p53-specific monoclonal antibodies and their use in the studies of human p53 expression. *Eur. J. Biochem.* 159: 529-534.
2. Hupp, T.R., et al. 1992. Regulation of the specific DNA binding function of p53. *Cell* 71: 875-886.
3. Appella, E., et al. 2000. Signaling to p53: breaking the posttranslational modification code. *Pathol. Biol.* 48: 227-245.
4. Krackhardt, A.M., et al. 2002. Identification of tumor-associated antigens in chronic lymphocytic leukemia by SEREX. *Blood* 100: 2123-2131.

CHROMOSOMAL LOCATION

Genetic locus: RBM38 (human) mapping to 20q13.31.

PRODUCT

RBM38 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 RBM38 shRNA Plasmid (h): sc-76368-SH and RBM38 shRNA (h) Lentiviral Particles: sc-76368-V as alternate gene silencing products.

For independent verification of RBM38 (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-76368A, sc-76368B and sc-76368C.

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

RBM38 siRNA (h) is recommended for the inhibition of RBM38 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

RBM38 (A-8): sc-365898 is recommended as a control antibody for monitoring of RBM38 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 RBM38 gene expression knockdown using RT-PCR Primer: RBM38 (h)-PR: sc-76368-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Goren, I., et al. 2019. Increase of cystathionine- γ -lyase (CSE) during late wound repair: hydrogen sulfide triggers Cytokeratin 10 expression in keratinocytes. *Nitric Oxide* 87: 31-42.
2. Sonnenschein, K., et al. 2019. Therapeutic modulation of RNA-binding protein RBM38 facilitates re-endothelialization after arterial injury. *Cardiovasc. Res.* 115: 1804-1810.

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.