SANTA CRUZ BIOTECHNOLOGY, INC.

BRMS1 siRNA (h): sc-60290

BACKGROUND

Breast cancer metastasis-suppressor 1 (BRMS1) is 246 amino acid protein that acts as a mediator of metastasis suppression in several types of cancer including ovarian, lung, bladder, and murine mammary. BRMS1 mRNA is expressed in various tissues, including ovary, prostate, testis, and colon, but the protein is primarily detected in term placenta. BRMS1 suppresses metastasis without inhibiting tumorigenicity by modifying several metastasis-associated phenotypes. BRMS1 may participate in transcriptional regulation by binding to the mSin3/histone deacetylase complex. The expression of BRMS1 in certain cells increases connexin Cx43 expression and reduces connexin Cx32 expression. This produces a gap junction that increases intercellular communication, similar to those found in normal breast tissue. BRMS1 is stabilized by HSP 90 and may inhibit NFκB activity.

REFERENCES

1. Meehan, W.J., et al. 2003. Breast cancer metastasis suppressor 1: update. Clin. Exp. Metastasis 20: 45-50.
2. Meehan, W.J., et al. 2004. Breast cancer metastasis suppressor 1 (BRMS1) forms complexes with retinoblastoma-binding protein 1 (RBP1) and the mSin3 histone deacetylase complex and represses transcription. J. Biol. Chem. 279: 1562-1569.
3. Kelly, L.M., et al. 2005. Expression of the breast cancer metastasis suppressor gene, BRMS1, in human breast carcinoma: lack of correlation with metastasis to axillary lymph nodes. Tumour Biol. 26: 213-206.
4. DeWald, D.B., et al. 2005. Metastasis suppression by breast cancer metastasis suppressor 1 involves reduction of phosphoinositide signaling in MDA-MB-435 breast carcinoma cells. Cancer Res. 65: 713-717.
5. Cicek, M., et al. 2005. Breast cancer metastasis suppressor 1 inhibits gene expression by targeting nuclear factor-κB activity. Cancer Res. 65: 3586-3595.
6. Stark, A.M., et al. 2005. Reduced metastasis-suppressor gene mRNA-expression in breast cancer brain metastases. J. Cancer Res. Clin. Oncol. 131: 191-198.

CHROMOSOMAL LOCATION

Genetic locus: BRMS1 (human) mapping to 11q13.2.

PRODUCT

BRMS1 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 BRMS1 shRNA Plasmid (h): sc-60290-SH and BRMS1 shRNA (h) Lentiviral Particles: sc-60290-V as alternate gene silencing products.

For independent verification of BRMS1 (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-60290A, sc-60290B and sc-60290C.

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

BRMS1 siRNA (h) is recommended for the inhibition of BRMS1 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.

GENE EXPRESSION MONITORING

BRMS1 (4H7): sc-101219 is recommended as a control antibody for monitoring of BRMS1 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 BRMS1 gene expression knockdown using RT-PCR Primer: BRMS1 (h)-PR: sc-60290-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.