

BRCA1 siRNA (m): sc-72662

BACKGROUND

The breast cancer-associated antigen BRCA1, also designated ARID domain-containing protein 4B (ARID4B), Sin3-associated polypeptide p180 (SAP180), or Retinoblastoma-binding protein 1-like 1 (RBBP1L1 or RBP1L1), shares 37% amino acid identity and an identical antigen epitope, SSKKQKRSHK, with Rb binding protein 1. High expression of BRCA1 mRNA has been found in human breast, lung, colon, pancreatic and ovarian cancers, as well as in normal testis. This expression pattern indicates that BRCA1 can be used as a molecular marker for a broad range of human malignancies. BRCA1 also interacts with RBBP1/ARID4A and regulates genomic imprinting at the Prader-Willi syndrome (PWS)/Angelman syndrome (AS) domain.

REFERENCES

1. Cao, J., et al. 2001. RBP1L1, a retinoblastoma-binding protein-related gene encoding an antigenic epitope abundantly expressed in human carcinomas and normal testis. *J. Natl. Cancer Inst.* 93: 1159-1165.
2. Fleischer, T.C., et al. 2003. Identification and characterization of three new components of the mSin3A corepressor complex. *Mol. Cell. Biol.* 23: 3456-3467.
3. Cui, D., et al. 2004. Characterization of BRCA1 and its novel antigen epitope identification. *Cancer Epidemiol. Biomarkers Prev.* 13: 1136-1145.
4. Wu, M.Y., et al. 2006. Deficiency of Rbbp1/Arid4a and Rbbp1l1/Arid4b alters epigenetic modifications and suppresses an imprinting defect in the PWS/AS domain. *Genes Dev.* 20: 2859-2870.
5. Wu, M.Y., et al. 2008. Identification of chromatin remodeling genes Arid4a and Arid4b as leukemia suppressor genes. *J. Natl. Cancer Inst.* 100: 1247-1259.

CHROMOSOMAL LOCATION

Genetic locus: Arid4b (mouse) mapping to 13 A1.

PRODUCT

BRCA1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BRCA1 shRNA Plasmid (m): sc-72662-SH and BRCA1 shRNA (m) Lentiviral Particles: sc-72662-V as alternate gene silencing products.

For independent verification of BRCA1 (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-72662A, sc-72662B and sc-72662C.

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.

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

BRCA1 siRNA (m) is recommended for the inhibition of BRCA1 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 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

BRCA1 (C-8): sc-515650 is recommended as a control antibody for monitoring of BRCA1 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 BRCA1 gene expression knockdown using RT-PCR Primer: BRCA1 (m)-PR: sc-72662-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.