SANTA CRUZ BIOTECHNOLOGY, INC.

BRD7 siRNA (h): sc-92998

BACKGROUND

BRD7 (bromodomain containing protein 7), also known as BP75 (75 kDa bromodomain protein), NAG4 or CELTIX1, is a 651 amino acid transcription regulation factor that contains one bromodomain and is expressed in liver, pancreas, intestines, kidney and cerebellum. Localizing to the nucleus, BRD7 plays an important role in cell cycle progression, signal-dependent gene expression and cell growth. BRD7 functions as a tumor suppressor, as is suggested by its apparent suppressive role on nasopharyngeal carcinoma (NPC) cell growth when overexpressed. Specifically, BRD7 negatively regulates the expression of cell cycle related proteins such as cyclin D1 and E2F-3, thereby inhibiting the G_1-S progression. BRD7 also interacts with the centrosome associated protein BLOS2 and this BRD7-BLOS2 interaction inhibits the transcriptional suppression activity of BRD7 on various target genes.

REFERENCES

1. Peng, C., et al. 2002. Analysis of bromodomain of BRD7 gene and its prokaryotic expression. Ai Zheng 21: 1167-1172.
2. Zhou, J., et al. 2004. BRD7, a novel bromodomain gene, inhibits G_1-S progression by transcriptionally regulating some important molecules involved in Ras/MEK/ERK and Rb/E2F pathways. J. Cell. Physiol. 200: 89-98.
3. Liu, H., et al. 2006. Cloning and characterization of the BRD7 gene promoter. DNA Cell Biol. 25: 346-358.
4. Zhou, M., et al. 2006. Identification of nuclear localization signal that governs nuclear import of BRD7 and its essential roles in inhibiting cell cycle progression. J. Cell. Biochem. 98: 920-930.
5. Zhou, M., et al. 2006. BRD2 is one of BRD7-interacting proteins and its over-expression could initiate apoptosis. Mol. Cell. Biochem. 292: 205-212.
6. Sun, H., et al. 2007. Solution structure of BRD7 bromodomain and its interaction with acetylated peptides from Histone H3 and H4. Biochem. Biophys. Res. Commun. 358: 435-441.
7. Peng, C., et al. 2007. BRD7 suppresses the growth of nasopharyngeal carcinoma cells (HNE1) through negatively regulating β-catenin and ERK pathways. Mol. Cell. Biochem. 303: 141-149.

CHROMOSOMAL LOCATION

Genetic locus: BRD7 (human) mapping to 16q12.1.

PRODUCT

BRD7 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 BRD7 shRNA Plasmid (h): sc-92998-SH and BRD7 shRNA (h) Lentiviral Particles: sc-92998-V as alternate gene silencing products.

For independent verification of BRD7 (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-92998A, sc-92998B and sc-92998C.

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

BRD7 siRNA (h) is recommended for the inhibition of BRD7 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

BRD7 (B-8): sc-376180 is recommended as a control antibody for monitoring of BRD7 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 BRD7 gene expression knockdown using RT-PCR Primer: BRD7 (h)-PR: sc-92998-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, Z., et al. 2020. The BRD7-P53-SLC25A28 axis regulates ferroptosis in hepatic stellate cells. Redox Biol. 36: 101619.

RESEARCH USE

For research use only, not for use in diagnostic procedures.