SANTA CRUZ BIOTECHNOLOGY, INC.

BRD4 siRNA (m): sc-141740

BACKGROUND

Brd4 belongs to the BET family, a group of structurally related proteins containing two bromodomains. Through these two domains, BRD4 associates with mitotic chromosomes and its expression correlates with cell growth. Expression of BRD4 inhibits cell cycle progression from G_1 to S, due to binding to the largest subunit of replication factor C (RFC) to prevent DNA elongation. Altered BRD4 function correlates with poorly differentiated carcinoma, with aggresive phenotype and a highly lethal outcome.

REFERENCES

1. French, C.A., et al. 2001. BRD4 bromodomain gene rearrangement in aggressive carcinoma with translocation t(15;19). Am. J. Pathol. 159: 1987-1992.
2. Houzelstein, D., et al. 2002. Growth and early postimplantation defects in mice deficient for the bromodomain-containing protein BRD4. Mol. Cell. Biol. 22: 3794-3802.
3. Maruyama, T., et al. 2002. A mammalian bromodomain protein, BRD4, interacts with replication factor C and inhibits progression to S phase. Mol. Cell. Biol. 22: 6509-6520.
4. French, C.A., et al. 2003. BRD4-NUT fusion oncogene: a novel mechanism in aggressive carcinoma. Cancer Res. 63: 304-307.
5. You, J., et al. 2004. Interaction of the bovine papillomavirus E2 protein with BRD4 tethers the viral DNA to host mitotic chromosomes. Cell 117: 349-360.
6. LocusLink Report (LocusID: 23476). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Brd4 (mouse) mapping to 17 B1.

PRODUCT

BRD4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BRD4 shRNA Plasmid (m): sc-141740-SH and BRD4 shRNA (m) Lentiviral Particles: sc-141740-V as alternate gene silencing products.

For independent verification of BRD4 (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-141740A, sc-141740B and sc-141740C.

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

BRD4 siRNA (m) is recommended for the inhibition of BRD4 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BRD4 gene expression knockdown using RT-PCR Primer: BRD4 (m)-PR: sc-141740-PR (20 µl, 518 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sharma, M., et al. 2007. Regulation of transcript elongation through cooperative and ordered recruitment of cofactors. J. Biol. Chem. 282: 20887-20896.
2. Zhang, K. and Xu, Y. 2020. Suppressing BRD4 exhibits protective effects against vincristine-induced peripheral neuropathy by alleviating inflammation and oxidative stress. Biochem. Biophys. Res. Commun. 532: 271-279.
3. Yang, N., et al. 2022. An interplay between BRD4 and G9a regulates skeletal myogenesis. Front. Cell Dev. Biol. 10: 978931.
4. Xu, F., et al. 2023. Bromodomain protein 4 is a key molecular driver of TGFβ1-induced hepatic stellate cell activation. Biochim. Biophys. Acta Mol. Cell Res. 1870: 119569.

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.