SANTA CRUZ BIOTECHNOLOGY, INC.

CBX4 siRNA (h2): sc-270615

BACKGROUND

Polycomb group (PcG) proteins form multiprotein complexes and play a role in gene silencing and Hox gene regulation by altering chromatin structure during transcription. The PcG protein CBX4, also known as, PC2 or NBP16, maps to human chromosome 17q25.3. CBX4 and CBX8 are PcG proteins that show structural similarity to M33 and, like M33, bind the PcG protein RING1 through a conserved c-box motif located in the C-terminus of RING1. CBX4 is a repressor of proto-oncogene activity, thus interference with CBX4 function can lead to depression of proto-oncogene transcription and subsequently to cellular transformation. CBX4 is able to act as a long range transcriptional silencer. CBX4 is expressed in the human osteosarcoma cell line U-20S. CBX4 is part of a large multiprotein complex that also contains other PcG proteins including Bmi-1.

REFERENCES

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2. Alkema, M., Jacobs, J., Voncken, J., Jenkins, N., Copeland, N., Satijin, D., Otte, A., Berns, A. and van Lohuzen, M. 1997. MPc2, a new murine homolog of the *Drosophilia* polycomb protein is a member of the mouse polycomb transcriptional repressor complex. J. Mol. Biol. 273: 993-1003.
3. Garcia, E., Marcos-Gutierrez, C., del Mar Lorente, M., Moreno, J.C. and Vidal, M. 1999. RYBP, a new repressor protein that interacts with components of the mammalian Polycomb complex, and with the transcription factor YY1. EMBO J. 18: 3404-3418.
4. Bel-Vialar, S., Core, N., Terranova, R., Goudot, V., Boned, A. and Djabali, M. 2000. Altered retinoic acid sensitivity and temporal expression of Hox genes in polycomb-M33-deficient mice. Dev. Biol. 224: 238-249.
5. Bardos, J.I., Saurin, A.J., Tissot, C., Duprez, E. and Freemont, P.S. 2000. HPC3 is a new human polycomb orthologue that interacts and associates with RING1 and BMI-1 and has transcriptional repression properties. J. Biol. Chem. 275: 28785-2892.
6. Hemenway, C.S., de Erkenez, A.C. and Gould, G.C. 2001. The polycomb protein MPc3 interacts with AF9, an MLL fusion partner in t(9;11)(p22;q23) acute leukemias. Oncogene 20: 3798-3805.

CHROMOSOMAL LOCATION

Genetic locus: CBX4 (human) mapping to 17q25.3.

PRODUCT

CBX4 siRNA (h2) is a target-specific 19-25 nt siRNA 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 CBX4 shRNA Plasmid (h2): sc-270615-SH and CBX4 shRNA (h2) Lentiviral Particles: sc-270615-V as alternate gene silencing 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 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

CBX4 siRNA (h2) is recommended for the inhibition of CBX4 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

CBX4 (6C5G3): sc-517216 is recommended as a control antibody for monitoring of CBX4 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CBX4 gene expression knockdown using RT-PCR Primer: CBX4 (h2)-PR: sc-270615-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. Zheng, Z., Qiu, K. and Huang, W. 2021. Long non-coding RNA (lncRNA) RAMS11 promotes metastatis and cell growth of prostate cancer by CBX4 complex binding to Top2α. Cancer Manag. Res. 13: 913-923.

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.