SANTA CRUZ BIOTECHNOLOGY, INC.

MTGR1 siRNA (h): sc-62645

BACKGROUND

MTGR1 (CBFA2T2, ETO homologous on chromosome 20) is a nuclear protein encoded by the human CBFA2T2 gene. MTGR1 belongs to the CBFA2T family and contains one MYND-type (myeloid translocation protein 8, Nervy and DEAF-1) zinc-finger and one TAFH (TBP-associated factor) domain. MTGR1 may function within the RUNX1/AML1-ETO/MTG8 chimeric protein complex which is produced from the chromosomal translocation t(8;21), which is also implicated with an acute myeloid leukemia. Within the RUNX complex, MTGR1 causes repression of RUNX1-dependent transcription and then induces G-CSF/CSF3-dependent growth. Therefore, MTGR1 is a tumor suppressor candidate for myeloid tumors containing a deletion within the 20q10-13 region. MTGR1 forms both a homo-oligomer and a hetero-oligomer with MTG8 and is ubiquitously expressed in fetal and adult tissues. CBFA2T2 deletion has been found in 10% of polycythemia vera (PV) cases.

REFERENCES

1. Fracchiolla, N.S., et al. 1998. EHT, a new member of the MTG8/ETO gene family, maps on 20q11 region and is deleted in acute myeloid leukemias. Blood 92: 3481-3484.
2. Kitabayashi, I., et al. 1998. The AML1-MTG8 leukemic fusion protein forms a complex with a novel member of the MTG8 (ETO/CDR) family, MTGR1. Mol. Cell. Biol. 18: 846-858.
3. Calabi, F., et al. 1998. CBFA2T1, a gene rearranged in human leukemia, is a member of a multigene family. Genomics 52: 332-341.
4. Morohoshi, F., et al. 2000. Structure and expression pattern of a human MTG8/ETO family gene, MTGR1. Gene 241: 287-295.

CHROMOSOMAL LOCATION

Genetic locus: CBFA2T2 (human) mapping to 20q11.21.

PRODUCT

MTGR1 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 MTGR1 shRNA Plasmid (h): sc-62645-SH and MTGR1 shRNA (h) Lentiviral Particles: sc-62645-V as alternate gene silencing products.

For independent verification of MTGR1 (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-62645A, sc-62645B and sc-62645C.

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

MTGR1 siRNA (h) is recommended for the inhibition of MTGR1 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

MTGR1 (B-7): sc-390114 is recommended as a control antibody for monitoring of MTGR1 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 MTGR1 gene expression knockdown using RT-PCR Primer: MTGR1 (h)-PR: sc-62645-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. Chen, D.C., et al. 2017. CBFA2T2 is associated with a cancer stem cell state in renal cell carcinoma. Cancer Cell Int. 17: 103.
2. Huang, H., et al. 2018. CBFA2T2 is required for BMP-2-induced osteogenic differentiation of mesenchymal stem cells. Biochem. Biophys. Res. Commun. 496: 1095-1101.
3. Luo, J., et al. 2020. CBFA2T2 promotes adipogenic differentiation of mesenchymal stem cells by regulating CEBPA. Biochem. Biophys. Res. Commun. 529: 133-139.

RESEARCH USE

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