SANTA CRUZ BIOTECHNOLOGY, INC.

# Romo1 siRNA (h): sc-76423

## BACKGROUND

Romo1 (reactive oxygen species modulator 1), whose alternative names include ROS modulator 1, Protein MGR2 homolog, MTGMP, bA353C18.2, C20orf52 or MGC111180, is a novel 79 amino acid single pass membrane protein which localizes to mitochondrial membranes. Romo1 is responsible for the production of reactive oxygen species (ROS), which is required for cell proliferation. Increased expression of Romo1 can cause premature senescence via ROS production, and contributes to induction of DNA damage. Romo1 expression increases in aging cells and is upregulated in cancer cell lines. Romo1 expression can also be induced by the anticancer drug fluorouracil (5FU). In cancer cells, Romo1 increases ROS and adds oxidative stress to tumor cells, which can increase their malignancy. Two isoforms of Romo1 exist as a result of alternative splicing, and the gene encoding Romo1 maps to human chromosome 20q11.22.

## REFERENCES


1. Chung, Y.M., Kim, J.S. and Yoo, Y.D. 2006. A novel protein, Romo1, induces ROS production in the mitochondria. Biochem. Biophys. Res. Commun. 347: 649-655.
2. Hwang, I.T., Chung, Y.M., Kim, J.J., Chung, J.S., Kim, B.S., Kim, H.J., Kim, J.S. and Yoo, Y.D. 2007. Drug resistance to 5-FU linked to reactive oxygen species modulator 1. Biochem. Biophys. Res. Commun. 359: 304-310.
3. Fruehauf, J.P. and Meyskens, F.L. 2007. Reactive oxygen species: a breath of life or death? Clin. Cancer Res. 13: 789-794.
4. Na, A.R., Chung, Y.M., Lee, S.B., Park, S.H., Lee, M.S. and Yoo, Y.D. 2008. A critical role for Romo1-derived ROS in cell proliferation. Biochem. Biophys. Res. Commun. 369: 672-678.
5. Chung, Y.M., Lee, S.B., Kim, H.J., Park, S.H., Kim, J.J., Chung, J.S. and Yoo, Y.D. 2008. Replicative senescence induced by Romo1-derived reactive oxygen species. J. Biol. Chem. 283: 33763-33771.
6. Chung, J.S., Lee, S.B., Park, S.H., Kang, S.T., Na, A.R., Chang, T.S., Kim, H.J. and Yoo, Y.D. 2009. Mitochondrial reactive oxygen species originating from Romo1 exert an important role in normal cell cycle progression by regulating p27(Kip1) expression. Free Radic. Res. 43: 729-737.


## CHROMOSOMAL LOCATION

Genetic locus: ROMO1 (human) mapping to 20q11.22.

## PRODUCT

Romo1 siRNA (h) is a pool of 2 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 Romo1 shRNA Plasmid (h): sc-76423-SH and Romo1 shRNA (h) Lentiviral Particles: sc-76423-V as alternate gene silencing products.

For independent verification of Romo1 (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-76423A and sc-76423B.

## 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

Romo1 siRNA (h) is recommended for the inhibition of Romo1 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.

## SELECT PRODUCT CITATIONS


1. Kim, H.J., Jo, M.J., Kim, B.R., Kim, J.L., Jeong, Y.A., Na, Y.J., Park, S.H., Lee, S.Y., Lee, D.H., Lee, H.S., Kim, B.H., Lee, S.I., Min, B.W., Yoo, Y.D. and Oh, S.C. 2017. Reactive oxygen species modulator-1 (Romo1) predicts unfavorable prognosis in colorectal cancer patients. PLoS ONE 12: e0176834.
2. Jo, M.J., Kim, B.G., Park, S.H., Kim, H.J., Jeong, S., Kim, B.R., Kim, J.L., Na, Y.J., Jeong, Y.A., Yun, H.K., Kim, D.Y., Han, J., Heo, J.Y., Yoo, Y.D., Lee, D.H. and Oh, S.C. 2020. Romo1 inhibition induces TRAIL-mediated apoptosis in colorectal cancer. Cancers 12: E2358.


## 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.