SANTA CRUZ BIOTECHNOLOGY, INC.

ROG siRNA (m): sc-38356

BACKGROUND

GATA-3, a T-cell specific zinc-finger transcription factor, is essential for the development, differentiation, and activation of T helper (Th) cells, which are capable of secreting high levels of cytokines. The GATA-3 interacting protein, ROG (repressor of GATA), represses the function of GATA-3 in part by preventing the binding of GATA-3 to its cognate DNA target sequence. Overexpression of ROG in Th cells specifically inhibits the production of cytokines Th1 and Th2, suggesting that ROG may regulate the differentiation of Th cells. Direct binding of ROG to DNA suggests that ROG is a potent negative regulator of Th cytokine genes as well as noncytokines genes. ROG is a lymphoid specific member of the POZ protein family that is expressed at very low levels in resting T-cells. Expression of ROG is substatially higher in both resting and activated B cells.

REFERENCES

1. Pandolfi, P.P., Roth, M.E., Karis, A., Leonard, M.W., Dzierzak, E., Grosveld, F.G., Engel, J.D. and Lindenbaum, M.H. 1995. Targeted disruption of the GATA3 gene causes severe abnormalities in the nervous system and in fetal liver haematopoiesis. Nat. Genet. 11: 40-44.
2. Ting, C.N., Olson, M.C., Barton, K.P. and Leiden, J.M. 1996. Transcription factor GATA-3 is required for development of the T-cell lineage. Nature 384: 474-478.
3. Zheng, W. and Flavell, R.A. 1997. The transcription factor GATA-3 is necessary and sufficient for Th2 cytokine gene expression in CD4 T cells. Cell 89: 587-596.
4. Zhang, D.H., Cohn, L., Raym P., Bottomly, K. and Ray, A. 1997. Transcription factor GATA-3 is differentially expressed in murine Th1 and Th2 cells and controls Th2-specific expression of the interleukin-5 gene. J. Biol. Chem. 272: 21597-21603.
5. Miaw, S.C., Choi, A., Yu, E., Kishikawa, H. and Ho, I.C. 2000. ROG, repressor of GATA, regulates the expression of cytokine genes. Immunity 12: 323-333.

CHROMOSOMAL LOCATION

Genetic locus: Zbtb32 (mouse) mapping to 7 B1.

PRODUCT

ROG 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 ROG shRNA Plasmid (m): sc-38356-SH and ROG shRNA (m) Lentiviral Particles: sc-38356-V as alternate gene silencing products.

For independent verification of ROG (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-38356A, sc-38356B and sc-38356C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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

ROG siRNA (m) is recommended for the inhibition of ROG 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 ROG gene expression knockdown using RT-PCR Primer: ROG (m)-PR: sc-38356-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. Shahi, P., Wang, C.Y., Lawson, D.A., Slorach, E.M., Lu, A., Yu, Y., Lai, M.D., Gonzalez Velozo, H. and Werb, Z. 2017. ZNF503/Zpo2 drives aggressive breast cancer progression by down-regulation of GATA3 expression. Proc. Natl. Acad. Sci. USA 114: 3169-3174.

RESEARCH USE

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