SANTA CRUZ BIOTECHNOLOGY, INC.

IQCG siRNA (h): sc-78063

BACKGROUND

IQCG (IQ motif containing G) is a 443 amino acid protein containing one IQ domain. Widely distributed in nature, the IQ domain forms an amphiphilic seven-turn α-helix capable of binding calmodulin in a Ca^{2+}-independent manner. The level of intracellular calcium is tightly regulated in all eukaryotic cells. A modest increase in this level can result in a myriad of physiological responses, most of which are mediated by calmodulin (CaM), the universal calcium sensor. In acute T-lymphoid/myeloid leukemia IQCG forms a complex with Nup98, an O-linked glycoprotein and a component of the nuclear pore complex. Nup98-IQCG complex bind co-activators and/or co-repressors, which suggest a role in transcriptional regulation. Nup98-IQCG complex inhibits 32Dcl3 cell apoptosis induced by Arabinofuranosylcytosine (Ara-C) and partially blocks granulocyte differentiation induced by G-CSF. IQCG exists as two isoforms due to alternatively splicing events.

REFERENCES

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2. Borrow, J., et al. 1996. The t(7;11)(p15;p15) translocation in acute myeloid leukaemia fuses the genes for nucleoporin Nup98 and class I homeoprotein HOXA9. Nat. Genet. 12: 159-167.
3. Bouché, N., et al. 2002. A novel family of calmodulin-binding transcription activators in multicellular organisms. J. Biol. Chem. 277: 21851-21861.
4. Terrak, M., et al. 2003. Two distinct myosin light chain structures are induced by specific variations within the bound IQ motifs-functional implications. EMBO J. 22: 362-371.
5. Nakatani, K., et al. 2004. Cell cycle-dependent transcriptional regulation of calmodulin-binding transcription activator 1 in neuroblastoma cells. Int. J. Oncol. 24: 1407-1412.
6. Black, D.J., et al. 2007. The kinetics of Ca^{2+}-dependent switching in a calmodulin-IQ domain complex. Biochemistry 46: 13415-13424.
7. Pan, Q., et al. 2008. A new fusion gene NUP98-IQCG identified in an acute T-lymphoid/myeloid leukemia with a t(3;11)(q29q13;p15)del(3)(q29) translocation. Oncogene 27: 3414-3423.

CHROMOSOMAL LOCATION

Genetic locus: IQCG (human) mapping to 3q29.

PRODUCT

IQCG 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 IQCG shRNA Plasmid (h): sc-78063-SH and IQCG shRNA (h) Lentiviral Particles: sc-78063-V as alternate gene silencing products.

For independent verification of IQCG (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-78063A, sc-78063B and sc-78063C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IQCG gene expression knockdown using RT-PCR Primer: IQCG (h)-PR: sc-78063-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.