SANTA CRUZ BIOTECHNOLOGY, INC.

GAAP siRNA (h): sc-96014

BACKGROUND

The BI-1 (Bax inhibitor 1) family is evolutionarily conserved as integral membrane proteins containing multiple membrane-spanning domains that are predominantly localized to intracellular membranes. BI-1 family members share multiple motifs and transcriptional factors within the promoter and the coding regions. They represent regulators of cell death pathways and are highly conserved in evolution from plants to insects, amphibians, mammals and poxviruses. GAAP (Golgi anti-apoptotic protein), also known as TMBIM4 (transmembrane Bax inhibitor motif containing 4), S1R, ZPRO or CGI-119, is a 238 amino acid multi-pass membrane protein that belongs to the BI-1 family. Ubiquitously expressed, GAAP inhibits apoptosis induced by intrinsic and extrinsic apoptotic stimuli.

REFERENCES

1. Fischer, D.F. and Backendorf, C. 2007. Identification of regulatory elements by gene family footprinting and *in vivo* analysis. Adv. Biochem. Eng. Biotechnol. 104: 37-64.
2. Reimers, K., et al. 2007. The growth-hormone inducible transmembrane protein (Ghitm) belongs to the Bax inhibitory protein-like family. Int. J. Biol. Sci. 3: 471-476.
3. Pronovost, P.J., et al. 2007. The GAAP in quality measurement and reporting. JAMA 298: 1800-1802.
4. Gubser, C., et al. 2007. A new inhibitor of apoptosis from vaccinia virus and eukaryotes. PLoS Pathog. 3: e17.
5. Zhou, J., et al. 2008. Comparative genomics and function analysis on BI-1 family. Comput. Biol. Chem. 32: 159-162.
6. Reimers, K., et al. 2008. The Bax inhibitor 1 (BI-1) family in apoptosis and tumorigenesis. Curr. Mol. Med. 8: 148-156.
7. de Mattia, F., et al. 2009. Human Golgi antiapoptotic protein modulates intracellular calcium fluxes. Mol. Biol. Cell 20: 3638-3645.

CHROMOSOMAL LOCATION

Genetic locus: TMBIM4 (human) mapping to 12q14.3.

PRODUCT

GAAP 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 GAAP shRNA Plasmid (h): sc-96014-SH and GAAP shRNA (h) Lentiviral Particles: sc-96014-V as alternate gene silencing products.

For independent verification of GAAP (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-96014A, sc-96014B and sc-96014C.

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

GAAP siRNA (h) is recommended for the inhibition of GAAP 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 GAAP gene expression knockdown using RT-PCR Primer: GAAP (h)-PR: sc-96014-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. Saran, S., et al. 2016. Depletion of three combined THOC5 mRNA export protein target genes synergistically induces human hepatocellular carcinoma cell death. Oncogene 35: 3872-3879.

RESEARCH USE

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