SANTA CRUZ BIOTECHNOLOGY, INC.

Gar22 siRNA (h): sc-75106

BACKGROUND

The Gas2 protein is thought to play a role in apoptosis by acting as a cell death substrate for caspases. Gas2, a component of the microfilament system, is cleaved by a caspase (caspase-3 or caspase-7) at Asparagine 278 during apoptosis. The cleaved form of Gas2 dramatically induces the re-arrangement of the Actin cytoskeleton and causes potent changes in the shape of the affected cells. Gas2 is a cytoskeleton and peripheral membrane protein that co-localizes with Actin fibers at the cell border and along the stress fibers in growth-arrested fibroblasts. Gas2 is mainly membrane-associated, but when hyperphosphorylated it will accumulate at membrane ruffles, indicating Gas2 involvement in that process. Gar22 (Gas2-related protein on chromosome 22), also designated growth arrest-specific protein 2-like 1 (Gas2-like1), belongs to the Gas2 family and contains one CH (calponinhomology) domain. It is thought to be involved in the cross-linking of microtubules and microfilaments.

REFERENCES

1. Zucman-Rossi, J., et al. 1996. Identification of new members of the Gas2 and Ras families in the 22q12 chromosome region. Genomics 38: 247-254.
2. Collavin, L., et al. 1998. cDNA characterization and chromosome mapping of the human GAS2 gene. Genomics 48: 265-269.
3. Sgorbissa, A., et al. 2000. Caspase-3 and caspase-7 but not caspase-6 cleave Gas2 *in vitro:* implications for microfilament reorganization during apoptosis. J. Cell Sci. 112: 4475-4482
4. Benetti, R., et al. 2001. The death substrate Gas2 binds μ-calpain and increases susceptibility to p53-dependent apoptosis. EMBO J. 20: 2702-2714.
5. Goriounov, D., et al. 2003. Protein products of human Gas2-related genes on chromosomes 17 and 22 (hGAR17 and hGAR22) associate with both microfilaments and microtubules. J. Cell Sci. 116: 1045-1058.
6. Ragni, E., et al. 2007. The Gas family of proteins of *Saccharomyces cerevisiae:* characterization and evolutionary analysis. Yeast 24: 297-308.
7. Ragni, E., et al. 2007. GAS2 and GAS4, a pair of developmentally regulated genes required for spore wall assembly in *Saccharomyces cerevisiae*. Eukaryotic Cell 6: 302-316.

CHROMOSOMAL LOCATION

Genetic locus: GAS2L1 (human) mapping to 22q12.2.

PRODUCT

Gar22 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 Gar22 shRNA Plasmid (h): sc-75106-SH and Gar22 shRNA (h) Lentiviral Particles: sc-75106-V as alternate gene silencing products.

For independent verification of Gar22 (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-75106A, sc-75106B and sc-75106C.

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

Gar22 siRNA (h) is recommended for the inhibition of Gar22 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 Gar22 gene expression knockdown using RT-PCR Primer: Gar22 (h)-PR: sc-75106-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.