SANTA CRUZ BIOTECHNOLOGY, INC.

FRAG1 siRNA (h): sc-96259

BACKGROUND

The glycosylphosphatidylinositol (GPI)-anchored proteins are subjected to lipid remodeling during their biosynthesis. FRAG1 (FGF receptor-activating protein 1), also known as PGAP2 (post-GPI attachment to proteins 2) or CWH43-N (cell wall biogenesis 43 N-terminal homolog), is a 315 amino acid multi-pass membrane protein and a member of the PGAP2 family. Ubiquitously expressed, with highest levels in testis and pancreas, FRAG1 localizes to both the Endoplasmic reticulum and the Golgi apparatus. FRAG1 interacts with PGAP2IP and is involved in the lipid remodeling steps of GPI-anchor maturation. FRAG1 is required for stable expression of GPI-anchored proteins at the cell surface. Existing as three alternatively spliced isoforms, FRAG1 is conserved in chimpanzee, dog and *Drosophila melanogaster,* and encoded by a gene located on human chromosome 11p15.4. Chromosome 11 is comprised of 135 million base pairs encoding approximately 1,400 genes and makes up around 4% of the human genome.

REFERENCES

1. Lorenzi, M.V., et al. 1996. FRAG1, a gene that potently activates fibroblast growth factor receptor by C-terminal fusion through chromosomal rearrangement. Proc. Natl. Acad. Sci. USA 93: 8956-8961.
2. Lorenzi, M.V., et al. 1999. Human FRAG1 encodes a novel membrane-spanning protein that localizes to chromosome 11p15.5, a region of frequent loss of heterozygosity in cancer. Genomics 62: 59-66.
3. Sharom, F.J., et al. 2002. Glycosylphosphatidylinositol-anchored proteins: structure, function, and cleavage by phosphatidylinositol-specific phospholipase C. Biochem. Cell Biol. 80: 535-549.
4. Sangiorgio, V., et al. 2004. GPI-anchored proteins and lipid rafts. Ital. J. Biochem. 53: 98-111.
5. Tashima, Y., et al. 2006. PGAP2 is essential for correct processing and stable expression of GPI-anchored proteins. Mol. Biol. Cell 17: 1410-1420.
6. Maeda, Y., et al. 2007. Fatty acid remodeling of GPI-anchored proteins is required for their raft association. Mol. Biol. Cell 18: 1497-1506.
7. Umemura, M., et al. 2007. *Saccharomyces cerevisiae* CWH43 is involved in the remodeling of the lipid moiety of GPI anchors to ceramides. Mol. Biol. Cell 18: 4304-4316.

CHROMOSOMAL LOCATION

Genetic locus: PGAP2 (human) mapping to 11p15.4.

PRODUCT

FRAG1 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 FRAG1 shRNA Plasmid (h): sc-96259-SH and FRAG1 shRNA (h) Lentiviral Particles: sc-96259-V as alternate gene silencing products.

For independent verification of FRAG1 (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-96259A, sc-96259B and sc-96259C.

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

FRAG1 siRNA (h) is recommended for the inhibition of FRAG1 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 FRAG1 gene expression knockdown using RT-PCR Primer: FRAG1 (h)-PR: sc-96259-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.