



GML siRNA (h): sc-77617

BACKGROUND

GML (glycosyl-phosphatidylinositol-anchored molecule-like protein) is a 158 amino acid membrane protein whose expression is regulated in a p53-dependent manner. Interestingly, GML has been shown to suppress growth in esophageal cancer cell lines and is likely to play a role in the apoptotic pathway. Due to evidence showing increased rates of apoptosis in GML-transfected cancer cell lines, it is suspected that reduced GML expression may correlate with poor response rates to chemotherapy. Significantly, in response to irradiation, the growth of cells expressing GML were inhibited, whereas cells not expressing GML were found to be resistant to ionizing radiation. This evidence further supports GML as a potential marker as a predictor of chemosensitivity. Mapping to chromosome 8, the gene encoding GML is localized to a region where two other genes encoding glycosyl-phosphatidylinositol (GPI) proteins, Ly-6D and TSA-1, are also located.

REFERENCES

1. Furuhashi, T., Tokino, T., Urano, T. and Nakamura, Y. 1996. Isolation of a novel GPI-anchored gene specifically regulated by p53; correlation between its expression and anti-cancer drug sensitivity. *Oncogene* 13: 1965-1970.
2. Kagawa, K., Inoue, T., Tokino, T., Nakamura, Y. and Akiyama, T. 1997. Overexpression of GML promotes radiation-induced cell cycle arrest and apoptosis. *Biochem. Biophys. Res. Commun.* 241: 481-485.
3. Kimura, Y., Furuhashi, T., Urano, T., Hirata, K., Nakamura, Y. and Tokino, T. 1997. Genomic structure and chromosomal localization of GML (GPI-anchored molecule-like protein), a gene induced by p53. *Genomics* 41: 477-480.
4. Kimura, Y., Furuhashi, T., Shiratsuchi, T., Nishimori, H., Hirata, K., Nakamura, Y. and Tokino, T. 1997. GML sensitizes cancer cells to Taxol by induction of apoptosis. *Oncogene* 15: 1369-1374.
5. Komiya, T., Hirashima, T., Kikui, M., Fukuoka, M., Ohno, A. and Kawase, I. 1999. GPI-anchored molecule-like protein (GML) expression in non-small cell lung cancer (NSCLC). *Anticancer Res.* 19: 4315-4319.
6. Ueda, K., Miyoshi, Y., Tokino, T., Watatani, M. and Nakamura, Y. 1999. Induction of apoptosis in T98G glioblastoma cells by transfection of GML, a p53 target gene. *Oncol. Res.* 11: 125-132.
7. Higashiyama, M., Miyoshi, Y., Kodama, K., Yokouchi, H., Takami, K., Nishijima, M., Nakayama, T., Kobayashi, H., Minamigawa, K. and Nakamura, Y. 2000. p53-regulated GML gene expression in non-small cell lung cancer: a promising relationship to cisplatin chemosensitivity. *Eur. J. Cancer* 36: 489-495.
8. Hashimoto, Y., Ueda, K., Minami, K. and Watatani, M. 2001. The potential clinical value of GML and the p53 gene as a predictor of chemosensitivity for colorectal cancer. *Int. J. Clin. Oncol.* 6: 90-96.
9. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 602370. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: GML (human) mapping to 8q24.3.

PRODUCT

GML 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GML shRNA Plasmid (h): sc-77617-SH and GML shRNA (h) Lentiviral Particles: sc-77617-V as alternate gene silencing products.

For independent verification of GML (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-77617A, sc-77617B and sc-77617C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GML siRNA (h) is recommended for the inhibition of GML 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 μ M in 66 μ l. 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 GML gene expression knockdown using RT-PCR Primer: GML (h)-PR: sc-77617-PR (20 μ l). 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.