SANTA CRUZ BIOTECHNOLOGY, INC.

GMF-γ siRNA (h): sc-97348

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The Power to Question

BACKGROUND

GMF-γ (glia maturation factor, γ), also known as GMFG, is a 142 amino acid protein that belongs to the GMF subfamily of the larger Actin-binding protein ADF family. GMF-γ is expressed predominantly in lung, heart and placenta. GMF-γ is considered a candidate regulatory growth factor protein, mediating both paracrine and autocrine cell-cell interactions. GMF-γ is phosphorylated at N-terminal serine, and its phosphorylation is enhanced by coexpression of dominant active Rac 1 and Cdc42. GMF-γ expression is significantly increased in a cardiac ischemia/reperfusion model where inflammation and angiogenesis take place actively. As a regulator of Actin-based cellular functions, GMF-γ may provide a novel approach to modulate the pathophysiology of cardiovascular diseases. GMF-γ is primarily found in proliferative and differentiative organs.

REFERENCES

1. Tsuiki, H., et al. 2000. Cloning of a rat glia maturation factor γ (rGMFG) cDNA and expression of its mRNA and protein in rat organs. J. Biochem. 127: 517-523.
2. Nishiwaki, A., et al. 2001. Expression of glia maturation factor during retinal development in the rat. Brain Res. Mol. Brain Res. 95: 103-109.
3. Asai, K. 2001. Review of the research of glia maturation factor and cloning of human and rat glia maturation factor γ (GMFG) cDNA. Nihon Shinkei Seishin Yakurigaku Zasshi 21: 15-20.
4. Inagaki, M., et al. 2004. Sensitive immunoassays for human and rat GMFB and GMFG, tissue distribution and age-related changes. Biochim. Biophys. Acta 1670: 208-216.
5. Hotta, N., et al. 2005. Expression of glia maturation factor β after cryogenic brain injury. Brain Res. Mol. Brain Res. 133: 71-77.
6. Ikeda, K., et al. 2006. Glia maturation factor γ is preferentially expressed in microvascular endothelial and inflammatory cells and modulates Actin cytoskeleton reorganization. Circ. Res. 99: 424-433.
7. Shi, Y., et al. 2006. Glia maturation factor γ (GMFG): a cytokine-responsive protein during hematopoietic lineage development and its functional genomics analysis. Genomics Proteomics Bioinformatics 4: 145-155.

CHROMOSOMAL LOCATION

Genetic locus: GMFG (human) mapping to 19q13.2.

PRODUCT

GMF-γ siRNA (h) is a pool of 2 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 GMF-γ shRNA Plasmid (h): sc-97348-SH and GMF-γ shRNA (h) Lentiviral Particles: sc-97348-V as alternate gene silencing products.

For independent verification of GMF-γ (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-97348A and sc-97348B.

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

GMF-γ siRNA (h) is recommended for the inhibition of GMF-γ 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.

GENE EXPRESSION MONITORING

GMF-γ (778J2F): sc-517637 is recommended as a control antibody for monitoring of GMF-γ gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GMF-γ gene expression knockdown using RT-PCR Primer: GMF-γ (h)-PR: sc-97348-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.