SANTA CRUZ BIOTECHNOLOGY, INC.

# GMF-β siRNA (h): sc-60707

## BACKGROUND

Glia maturation factor β (GMF-β) belongs to the GMF subfamily of the larger Actin-binding protein ADF family. This protein, which is phosphorylated following phorbol ester stimulation, is important for the nervous system. It causes brain cell differentiation, stimulates neural regeneration and inhibits tumor cell proliferation. Overexpression of GMF in astrocytes has been shown to enhance brain-derived neurotrohic factor (BDNF) production. GMF expression is increased by exercise, and the protein is crucial for exercise-induction of BDNF. Through BDNF production, GMF appears to play a role in neuroprotection. In thymoma, T cell development is maintained by GMF-β being produced by the tumor cells.

## REFERENCES


1. Kaplan, R., Zaheer, A., Jaye, M. and Lim, R. 1991. Molecular cloning and expression of biologically active human glia maturation factor β. J. Neurochem. 57: 483-490.
2. Lim, R. and Zaheer, A. 1995. Phorbol ester stimulates rapid intracellular phosphorylation of glia maturation factor. Biochem. Biophys. Res. Commun. 211: 928-934.
3. Lim, R., Zaheer, A., Khosravi, H., Freeman, J.H., Jr, Halverson, H.E., Wemmie, J.A. and Yang, B. 2004. Impaired motor performance and learning in glia maturation factor-knockout mice. Brain Res. 1024: 225-232.
4. Zaheer, A., Yang, B., Cao, X. and Lim, R. 2004. Decreased copper-zinc superoxide dismutase activity and increased resistance to oxidative stress in glia maturation factor-null astrocytes. Neurochem. Res. 29: 1473-1480.
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6. Yamazaki, H., Tateyama, H., Asai, K., Fukai, I., Fujii, Y., Tada, T. and Eimoto, T. 2005. Glia maturation factor β is produced by thymoma and may promote intratumoral T cell differentiation. Histopathology 47: 292-302.
7. Zaheer, A., Haas, J.T., Reyes, C., Mathur, S.N., Yang, B. and Lim, R. 2006. GMF-knockout mice are unable to induce brain-derived neurotrophic factor after exercise. Neurochem. Res. 31: 579-584.


## CHROMOSOMAL LOCATION

Genetic locus: GMFB (human) mapping to 14q22.2.

## PRODUCT

GMF-β 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 GMF-β shRNA Plasmid (h): sc-60707-SH and GMF-β shRNA (h) Lentiviral Particles: sc-60707-V as alternate gene silencing products.

For independent verification of GMF-β (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-60707A, sc-60707B and sc-60707C.

## 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-β siRNA (h) is recommended for the inhibition of GMF-β 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-β (SP-61): sc-134347 is recommended as a control antibody for monitoring of GMF-β 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GMF-β gene expression knockdown using RT-PCR Primer: GMF-β (h)-PR: sc-60707-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.