

GMF- β (SP-61): sc-134347

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 neurotrophic 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., et al. 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. Zaheer, A., et al. 2004. Decreased copper-zinc super-oxide dismutase activity and increased resistance to oxidative stress in glia maturation factor-null astrocytes. *Neurochem. Res.* 29: 1473-1480.

CHROMOSOMAL LOCATION

Genetic locus: GMFB (human) mapping to 14q22.2; Gmfb (mouse) mapping to 14 C1.

SOURCE

GMF- β (SP-61) is a mouse monoclonal antibody raised against recombinant GMF- β protein of human origin.

PRODUCT

Each vial contains 100 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GMF- β (SP-61) is recommended for detection of GMF- β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GMF- β siRNA (h): sc-60707, GMF- β siRNA (m): sc-60708, GMF- β shRNA Plasmid (h): sc-60707-SH, GMF- β shRNA Plasmid (m): sc-60708-SH, GMF- β shRNA (h) Lentiviral Particles: sc-60707-V and GMF- β shRNA (m) Lentiviral Particles: sc-60708-V.

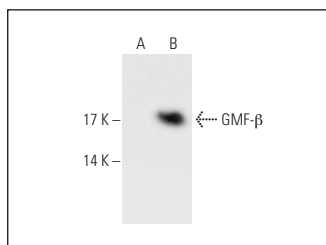
Molecular Weight of GMF- β : 17 kDa.

Positive Controls: GMF- β (m): 293T Lysate: sc-120543, Jurkat whole cell lysate: sc-2204 or T98G cell lysate: sc-2294.

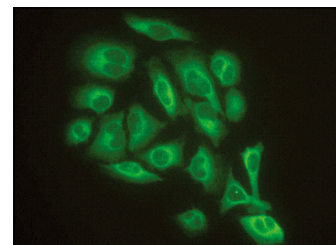
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GMF- β (SP-61): sc-134347. Western blot analysis of GMF- β expression in non-transfected: sc-117752 (A) and mouse GMF- β transfected: sc-120543 (B) 293T whole cell lysates.



GMF- β (SP-61): sc-134347. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Xing, R., et al. 2016. Spatial memory impairment by TRPC1 depletion is ameliorated by environmental enrichment. *Oncotarget* 7: 27855-27873.
2. Dincel, G.C. and Kul, O. 2019. First description of enhanced expression of transforming growth factor- α (TGF- α) and glia maturation factor- β (GMF- β) correlate with severity of neuropathology in border disease virus-infected small ruminants. *Microb. Pathog.* 128: 301-310.
3. Raikwar, S.P., et al. 2019. Targeted gene editing of glia maturation factor in microglia: a novel Alzheimer's disease therapeutic target. *Mol. Neurobiol.* 56: 378-393.
4. Shi, S., et al. 2023. Glia maturation factor β deficiency protects against diabetic osteoporosis by suppressing osteoclast hyperactivity. *Exp. Mol. Med.* 55: 898-909.
5. Tong, X.Y., et al. 2024. Mechanism of Alzheimer type II astrocyte development in hepatic encephalopathy. *Neurochem. Int.* 180: 105866.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.