

# GM3 Synthase (B-12): sc-365329

## BACKGROUND

GM3 Synthase, also known as Sialyltransferase 9 or ST3Gal V, is a Golgi type II transmembrane glycosyltransferase predominantly expressed in brain and placenta. It belongs to the glycosyltransferase family 29 and is involved in the biosynthesis of complex gangliosides. In particular, GM3 Synthase catalyzes the transfer of  $\alpha$  sialic acid to the terminal galactose of lactosylceramide to form the ganglioside GM3. GM3 is the simplest ganglioside and it participates in cell differentiation, signal transduction, and modulation of cell proliferation. The synthesis of GM3 by GM3 Synthase is the first major step in the formation of almost all other gangliosides. For this reason, GM3 Synthase acts as a key regulatory enzyme in the biosynthesis of gangliosides. A mutation in the gene encoding GM3 Synthase can lead to the inability to synthesize  $\alpha$ - and  $\beta$ -series gangliosides and may result in Amish infantile epilepsy syndrome.

## CHROMOSOMAL LOCATION

Genetic locus: ST3GAL5 (human) mapping to 2p11.2; St3gal5 (mouse) mapping to 6 C1.

## SOURCE

GM3 Synthase (B-12) is a mouse monoclonal antibody raised against amino acids 11-135 mapping near the N-terminus of GM3 Synthase of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GM3 Synthase (B-12) is available conjugated to agarose (sc-365329 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365329 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365329 PE), fluorescein (sc-365329 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365329 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365329 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365329 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365329 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365329 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365329 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

GM3 Synthase (B-12) is recommended for detection of GM3 Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 GM3 Synthase siRNA (h): sc-72297, GM3 Synthase siRNA (m): sc-72298, GM3 Synthase shRNA Plasmid (h): sc-72297-SH, GM3 Synthase shRNA Plasmid (m): sc-72298-SH, GM3 Synthase shRNA (h) Lentiviral Particles: sc-72297-V and GM3 Synthase shRNA (m) Lentiviral Particles: sc-72298-V.

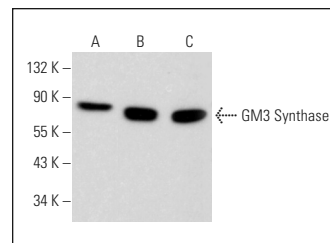
Molecular Weight of GM3 Synthase: 60 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Sol8 cell lysate: sc-2249 or SH-SY5Y cell lysate: sc-3812.

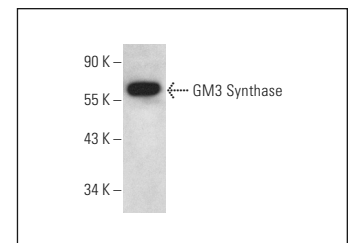
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



GM3 Synthase (B-12): sc-365329. Western blot analysis of GM3 Synthase expression in Jurkat (A), L6 (B) and Sol8 (C) whole cell lysates.



GM3 Synthase (B-12): sc-365329. Western blot analysis of GM3 Synthase expression in SH-SY5Y whole cell lysate.

## SELECT PRODUCT CITATIONS

- Šmíd, V., et al. 2018. Heme oxygenase-1 may affect cell signalling via modulation of ganglioside composition. *Oxid. Med. Cell. Longev.* 2018: 3845027.
- Guo, X.L., et al. 2019. Endogenous pore-forming protein complex targets acidic glycosphingolipids in lipid rafts to initiate endolysosome regulation. *Commun. Biol.* 2: 59.
- Ghiroldi, A., et al. 2020. Role of sialidase Neu3 and ganglioside GM3 in cardiac fibroblasts activation. *Biochem. J.* 477: 3401-3415.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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