

GM3 Synthase (A-19): sc-54076

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 α 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 α - and β -series gangliosides and may result in Amish infantile epilepsy syndrome.

REFERENCES

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5. Simpson, M.A., et al. 2004. Infantile-onset symptomatic epilepsy syndrome caused by a homozygous loss-of-function mutation of GM3 Synthase. *Nat. Genet.* 36: 1225-1229.
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CHROMOSOMAL LOCATION

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

SOURCE

GM3 Synthase (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GM3 Synthase of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54076 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GM3 Synthase (A-19) is recommended for detection of GM3 Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GM3 Synthase (A-19) is also recommended for detection of GM3 Synthase in additional species, including equine, canine and bovine.

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: mouse liver extract: sc-2256.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.