SANTA CRUZ BIOTECHNOLOGY, INC.

iGb3 (D-2): sc-515685

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

iGb3 (isogloboside 3), also known as isoglobotrihexosylceramide, A3GALT2 (α 1,3-galactosyltransferase 2), A3GALT2P or IGBS3S (isoglobotriaosylceramide synthase), is a 370 amino acid protein that belongs to the glycosyltransferase 6 family. Involved in natural killer T cell development, iGb3 also synthesizes the galactose-α (1,3)-galactose group on α-galactose. Localizing to Golgi apparatus, iGb3 glycosylates lipids and binds manganese as a cofactor. The gene encoding iGb3 maps to human chromosome 1, which spans 260 million base pairs and contains over 3,000 genes. Human chromosome 1 comprises nearly 8% of the human genome and houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

REFERENCES

1. Eudy, J.D., et al. 1998. Mutation of a gene encoding a protein with extracellular matrix motifs in Usher syndrome type IIa. Science 280: 1753-1757.
2. Lau, E.K., et al. 1999. Two novel polymorphic sequences in the glucocerebrosidase gene region enhance mutational screening and founder effect studies of patients with Gaucher disease. Hum. Genet. 104: 293-300.
3. Plasilova, M., et al. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. Eur. J. Hum. Genet. 12: 365-371.
4. Oliveira, S.A., et al. 2005. Identification of risk and age-at-onset genes on chromosome 1p in Parkinson disease. Am. J. Hum. Genet. 77: 252-264.
5. Porubsky, S., et al. 2007. Normal development and function of invariant natural killer T cells in mice with isoglobotrihexosylceramide (iGb3) deficiency. Proc. Natl. Acad. Sci. USA 104: 5977-5982.
6. Christiansen, D., et al. 2008. Humans lack iGb3 due to the absence of functional iGb3-synthase: implications for NKT cell development and transplantation. PLoS Biol. 6: e172.
7. Yurov, Y.B., et al. 2008. The schizophrenia brain exhibits low-level aneuploidy involving chromosome 1. Schizophr. Res. 98: 139-147.
8. Yokoi, T., et al. 2009. Analysis of the vitreous membrane in a case of type 1 Stickler syndrome. Graefes Arch. Clin. Exp. Ophthalmol. 247: 715-718.

CHROMOSOMAL LOCATION

Genetic locus: A3GALT2 (human) mapping to 1p35.1.

SOURCE

iGb3 (D-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 225-242 within an internal region of iGb3 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

iGb3 (D-2) is recommended for detection of iGb3 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

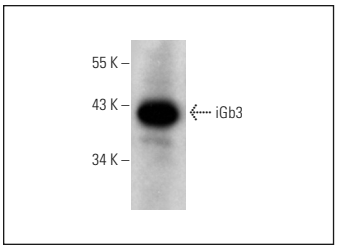
Molecular Weight of iGb3: 43 kDa.

Positive Controls: NCI-H292 whole cell lysate: sc-364179 or AMJ2-C8 whole cell lysate: sc-364366.

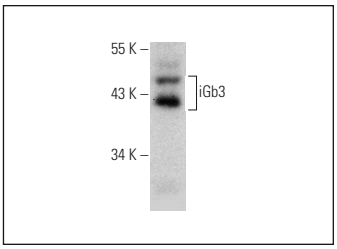
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



iGb3 (D-2): sc-515685. Western blot analysis of iGb3 expression in NCI-H292 whole cell lysate.



iGb3 (D-2): sc-515685. Western blot analysis of iGb3 expression in AMJ2-C8 whole cell lysate.

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 for detailed protocols and support products.