SANTA CRUZ BIOTECHNOLOGY, INC.

Ganglioside GD2 (14G2a): sc-53831

BACKGROUND

Gangliosides are key players in determining the nature of tetraspanin interactions and are major components of the tetraspanin web. The GD2 gangliosides are sialic acid-containing glycosphingolipids that play a role in signal transduction and cell-cell recognition. Ganglioside GD2 production is controlled by GM2/GD2 synthase. It is found in all tissues and localizes to the cell surface. Ganglioside GD2 is involved in the onset of apoptosis by dephosphorylating focal adhesion kinases. Ganglioside GD2 is abundant on neuroblastoma cells and on all tumors originating in the neuroectoderm, such as malignant melanoma, adult T cell leukemia, and certain colon and gastric cancers. This suggests that Ganglioside GD2 may be a good target for immunotherapy. Additionally, Ganglioside GD2 is found on mesenchymal stromal cells and may be a unique surface marker.

SOURCE

Ganglioside GD2 (14G2a) is a mouse monoclonal antibody raised against neuroectodermal tumor cells of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ganglioside GD2 (14G2a) is available conjugated to agarose (sc-53831 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53831 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53831 PE), fluorescein (sc-53831 FITC), Alexa Fluor® 488 (sc-53831 AF488), Alexa Fluor® 546 (sc-53831 AF546), Alexa Fluor® 594 (sc-53831 AF594) or Alexa Fluor® 647 (sc-53831 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53831 AF680) or Alexa Fluor® 790 (sc-53831 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Ganglioside GD2 (14G2a) is recommended for detection of Ganglioside GD2 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

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.

SELECT PRODUCT CITATIONS

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3. Ruf, P., et al. 2012. Ganglioside GD2-specific trifunctional surrogate antibody Surek demonstrates therapeutic activity in a mouse melanoma model. J. Transl. Med. 10: 219.
4. Liu, B., et al. 2014. Endothelin A receptor antagonism enhances inhibitory effects of anti-Ganglioside GD2 monoclonal antibody on invasiveness and viability of human osteosarcoma cells. PLoS ONE 9: e93576.
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6. Villanueva-Cabello, T.M., et al. 2015. Activation of human naïve Th cells increases surface expression of GD3 and induces neoexpression of GD2 that colocalize with TCR clusters. Glycobiology 25: 1454-1464.
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8. Yu, J., et al. 2018. Anti-GD2/4-1BB chimeric antigen receptor T cell therapy for the treatment of Chinese melanoma patients. J. Hematol. Oncol. 11: 1.
9. Aygün, Z., et al. 2019. Frequency of ALK and GD2 expression in neuroblastoma. Fetal Pediatr. Pathol. 7: 1-9.
10. Doronin, I.I., et al. 2019. Involvement of Actin filaments in the cytotoxic effect of GD2-specific antibodies. Bull. Exp. Biol. Med. 166: 541-547.
11. Saraf, A.J., et al. 2019. Disialoganglioside GD2 expression in pediatric rhabdomyosarcoma: a case series and review of the literature. J. Pediatr. Hematol. Oncol. 41: 118-120.
12. Tong, W., et al. 2019. Vaccination with tumor-ganglioside glycomimetics activates a selective immunity that affords cancer therapy. Cell Chem. Biol. 26: 1013-1026.
13. Zhang, Y., et al. 2020. Directed differentiation of notochord-like and nucleus pulposus-like cells using human pluripotent stem cells. Cell Rep. 30: 2791-2806.e5.
14. Plaza Reyes, A., et al. 2020. Identification of cell surface markers and establishment of monolayer differentiation to retinal pigment epithelial cells. Nat. Commun. 11: 1609.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.