SANTA CRUZ BIOTECHNOLOGY, INC.

NG2 (7.1): sc-53508

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NG2 (also known as melanoma-associated chondroitin sulfate proteoglycan 4, MCSP, MCSPG, MSK16 and MEL-CSPG) stabilizes cell-substratum interactions during early events of melanoma cell spreading on endothelial basement membranes. NG2 may facilitate primary melanoma progression by enhancing the activation of key signaling pathways important for tumor invasion and growth. Threonine 2256 phosphorylation of rat NG2 (Threonine 2252 phosphorylation of human NG2) leads to redistribution of NG2 on the surface of astrocytomas, polarization of the cell and a significant increase in cell motility. NG2 acts as a co-receptor for spreading and focal contact formation in association with α4/β1 Integrin in malignant melanoma cells. NG2 is present on blood vessels throughout the rat embryo. Microvessels within the rat CNS express NG2 on endothelial cells, and outside the CNS, NG2 is present on smooth muscle cells. NG2 is a novel marker for epidermal stem cells that contributes to their patterned distribution by promoting stem cell clustering.

REFERENCES

1. Yamaguchi, Y. and Ruoslahti, E. 1988. Expression of human proteoglycan in Chinese hamster ovary cells inhibits cell proliferation. Nature 336: 244-246.
2. Iida, J., et al. 1995. Spreading and focal contact formation of human melanoma cells in response to the stimulation of both melanoma-associated proteoglycan (NG2) and α4/β1 Integrin. Cancer Res. 55: 2177-2185.
3. Grako, K.A., et al. 1995. Participation of the NG2 proteoglycan in rat aortic smooth muscle cell responses to platelet-derived growth factor. Exp. Cell Res. 221: 231-240.
4. Behm, F.G., et al. 1996. Human homologue of the rat chondroitin sulfate proteoglycan, NG2, detected by monoclonal antibody 7.1, identifies childhood acute lymphoblastic leukemias with t(4;11)(q21;q23) or t(11;19)(q23;p13) and MLL gene rearrangements. Blood 87: 1134-1139.
5. Grako, K.A., et al. 1999. PDGFα-receptor is unresponsive to PDGF-AA in aortic smooth muscle cells from the NG2 knockout mouse. J. Cell Sci. 112: 905-915.
6. Pouly, S., et al. 1999. Expression of a homologue of rat NG2 on human microglia. Glia 27: 259-268.
7. Wuchter, C., et al. 2000. Detection of acute leukemia cells with mixed lineage leukemia (MLL) gene rearrangements by flow cytometry using monoclonal antibody 7.1. Leukemia 14: 1232-1238.
8. Makagiansar, I.T., et al. 2004. Phosphorylation of NG2 proteoglycan by protein kinase C-α regulates polarized membrane distribution and cell motility. J. Biol. Chem. 279: 55262-55270.
9. Pitera, J.E., et al. 2004. Dysmorphogenesis of kidney cortical peritubular capillaries in angiopoietin-2-deficient mice. Am. J. Pathol. 165: 1895-1906.

CHROMOSOMAL LOCATION

Genetic locus: CSPG4 (human) mapping to 15q24.2.

RESEARCH USE

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

SOURCE

NG2 (7.1) is a mouse monoclonal antibody raised against BM stromal cells infected with SV-40 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NG2 (7.1) is available conjugated to either phycoerythrin (sc-53508 PE) or fluorescein (sc-53508 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

NG2 (7.1) is recommended for detection of NG2 of human origin by Western Blotting (starting dilution 1:200, 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 flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for NG2 siRNA (h): sc-40771, NG2 shRNA Plasmid (h): sc-40771-SH and NG2 shRNA (h) Lentiviral Particles: sc-40771-V.

Molecular Weight of NG2: 270-300 kDa.

Positive Controls: SK-MEL-28 cell lysate: sc-2236.

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 A/G PLUS-Agarose: sc-2003 (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.

SELECT PRODUCT CITATIONS

1. Lauridsen, H.M., et al. 2017. Tumor necrosis factor-α and IL-17A activation induces pericyte-mediated basement membrane remodeling in human neutrophilic dermatoses. Am. J. Pathol. 187: 1893-1906.

STORAGE

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

CONJUGATES

See **NG2 (LHM 2): sc-53389** for NG2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.