SANTA CRUZ BIOTECHNOLOGY, INC.

NG2 (5H26): sc-71690

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. 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.
2. 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.
3. 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.
4. 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.
5. Pitera, J.E., et al. 2004. Dysmorphogenesis of kidney cortical peritubular capillaries in angiopoietin-2-deficient mice. Am. J. Pathol. 165: 1895-1906.
6. Aguirre, A.A., et al. 2004. NG2-expressing cells in the subventricular zone are type C-like cells and contribute to interneuron generation in the postnatal hippocampus. J. Cell Biol. 165: 575-589.
7. Fukushi, J., et al. 2004. NG2 proteoglycan promotes endothelial cell motility and angiogenesis via engagement of galectin-3 and α3/β1 integrin. Mol. Biol. Cell 15: 3580-3590.
8. Aguirre, A., et al. 2004. Postnatal neurogenesis and gliogenesis in the olfactory bulb from NG2-expressing progenitors of the subventricular zone. J. Neurosci. 24: 10530-10541.
9. Lin, S.C., et al. 2005. Climbing fiber innervation of NG2-expressing glia in the mammalian cerebellum. Neuron 46: 773-785.

CHROMOSOMAL LOCATION

Genetic locus: Cspg4 (mouse) mapping to 9 B.

STORAGE

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

SOURCE

NG2 (5H26) is a mouse monoclonal antibody raised against HEK293 cells expressing a truncated integral membrane form of NG2 consisting of amino acids 1592-2222.

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.

APPLICATIONS

NG2 (5H26) is recommended for detection of NG2 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for NG2 siRNA (m): sc-40772, NG2 shRNA Plasmid (m): sc-40772-SH and NG2 shRNA (m) Lentiviral Particles: sc-40772-V.

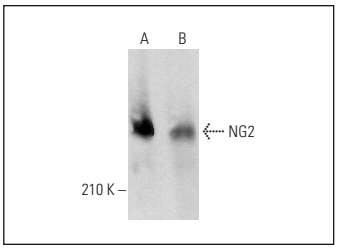
Molecular Weight of NG2: 270-300 kDa.

Positive Controls: rat thyroid extract: sc-2402 or rat brain extract: sc-2392.

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.

DATA



NG2 (5H26): sc-71690. Western blot analysis of NG2 expression in rat brain (**A**) and rat thyroid (**B**) tissue extracts.

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.