

# p-NG2 (Thr 2252): sc-33038

## BACKGROUND

NG2 (also designated 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  $\alpha 4 \beta 1$  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

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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. PDGF  $\alpha$ -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  $\alpha$  regulates polarized membrane distribution and cell motility. *J. Biol. Chem.* 279: 55262-55270.
5. Pitera, J.E., et al. 2004. Dismorphogenesis of kidney cortical peritubular capillaries in angiotensin-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  $\alpha 3 \beta 1$  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.

## CHROMOSOMAL LOCATION

Genetic locus: CSPG4 (human) mapping to 15q24.2; Cspg4 (mouse) mapping to 9 B.

## SOURCE

p-NG2 (Thr 2252) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Thr 2252 NG2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-33038 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-NG2 (Thr 2252) is recommended for detection of Thr 2252 phosphorylated NG2 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).

p-NG2 (Thr 2252) is also recommended for detection of correspondingly phosphorylated NG2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for NG2 siRNA (h): sc-40771, NG2 siRNA (m): sc-40772, NG2 shRNA Plasmid (h): sc-40771-SH, NG2 shRNA Plasmid (m): sc-40772-SH, NG2 shRNA (h) Lentiviral Particles: sc-40771-V and NG2 shRNA (m) Lentiviral Particles: sc-40772-V.

Positive Controls: Rat brain extract: sc-2392.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> 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](http://www.scbt.com) or our catalog for detailed protocols and support products.