

# Wnt-3 (N-15): sc-5213

## BACKGROUND

The Wnt gene family encodes secreted signaling molecules that bind to frizzled receptors and influence oncogenesis and developmental processes, including regulation of cell fate and patterning during embryogenesis. The Wnt family has two functional classes according to their biological activities: Wnts that signal through a Wnt-1/wingless pathway by stabilizing cytoplasmic  $\beta$ -catenin, and Wnts that stimulate intracellular  $Ca^{2+}$  release and activate two kinases, CamKII and PKC, in a G protein-dependent manner. Wnt-3 is present during development of the cerebellum and is restricted to the Purkinje cell layer in the adult. In motoneurons, Wnt-3 is a retrograde signal that controls terminal branching of muscle afferents. Human Wnt-3 is 98% homologous to mouse Wnt-3 protein and 84% homologous to human Wnt-3a protein. The human Wnt-3 gene clusters with the Wnt-15 gene at chromosome 17q21.31.

## REFERENCES

- Salinas, P.C., et al. 1992. Regional expression of the Wnt-3 gene in the developing mouse forebrain in relationship to diencephalic neuromeres. *Mech. Dev.* 39: 151-160.
- Salinas, P.C., et al. 1994. Maintenance of Wnt-3 expression in Purkinje cells of the mouse cerebellum depends on interactions with granule cells. *Development* 120: 1277-1286.
- Kuhl, M., et al. 2000. The Wnt/ $Ca^{2+}$  pathway: a new vertebrate Wnt signaling pathway takes shape. *Trends Genet.* 16: 279-283.
- Krylova, O., et al. 2002. Wnt-3, expressed by motoneurons, regulates terminal arborization of neurotrophin-3-responsive spinal sensory neurons. *Neuron* 35: 1043-1056.

## CHROMOSOMAL LOCATION

Genetic locus: WNT3 (human) mapping to 17q21.31, WNT3A (human) mapping to 1q42.13; Wnt3 (mouse) mapping to 11 E1, Wnt3a (mouse) mapping to 11 B1.3.

## SOURCE

Wnt-3 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Wnt-3 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-5213 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

Wnt-3 (N-15) is recommended for detection of Wnt-3, and to a lesser extent, Wnt-3a 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).

Wnt-3 (N-15) is also recommended for detection of Wnt-3, and to a lesser extent, Wnt-3a in additional species, including equine, canine, bovine and avian.

Molecular Weight (predicted) of Wnt-3: 39 kDa.

Molecular Weight (observed) of Wnt-3: 65 kDa.

Positive Controls: rat testis extract: sc-2400.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

- Nikolova, T., et al. 2007. WNT-conditioned media differentially affect the proliferation and differentiation of cord blood-derived CD133<sup>+</sup> cells *in vitro*. *Differentiation* 75: 100-111.
- Widstrand, A., et al. 2007. Increased neurogenesis and astrogenesis from neural progenitor cells grafted in the hippocampus of GFAP<sup>-/-</sup> Vim<sup>-/-</sup> mice. *Stem Cells* 25: 2619-2627.
- Salazar, K.D., et al. 2009. Mesenchymal stem cells produce Wnt isoforms and TGF- $\beta$ 1 that mediate proliferation and procollagen expression by lung fibroblasts. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 297: L1002-L1011.
- David, M.D., et al. 2010. Wnt-3a and Wnt-3 differently stimulate proliferation and neurogenesis of spinal neural precursors and promote neurite outgrowth by canonical signaling. *J. Neurosci. Res.* 88: 3011-3023.
- Zhan, L., et al. 2012. Regulatory role of KEAP1 and NRF2 in PPAR $\gamma$  expression and chemoresistance in human non-small-cell lung carcinoma cells. *Free Radic. Biol. Med.* 53: 758-768.


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Try **Wnt-3 (D-9): sc-74537** or **Wnt-3a (3A6): sc-136163**, our highly recommended monoclonal alternatives to Wnt-3 (N-15).