

# Nogo-R (N-20): sc-16707

## BACKGROUND

CNS white matter is selectively inhibitory for axonal outgrowth. Nogo is an oligodendrocyte-specific member of the Reticulon family and is a component of CNS white matter that prevents axonal regeneration in the adult CNS. Nogo is expressed by oligodendrocytes and associates primarily with the endoplasmic reticulum. The extracellular domain of Nogo, designated Nogo-66 inhibits axonal extension, but does not alter non-neuronal cell morphology. Expression of a brain-specific, leucine-rich-repeat protein with high affinity for Nogo-66, the Nogo-66 receptor (Nogo-R), is sufficient to impart Nogo-66 axonal inhibition to unresponsive neurons. Disruption of the interaction between Nogo-66 and Nogo-R potentially provides for enhanced recovery after human CNS injury. Nogo-R is widely expressed in the brain, with the highest levels of expression in the gray matter of the CNS. In addition, low levels of Nogo-R mRNA are expressed in heart and kidney. The gene encoding Nogo-R maps to human chromosome 22q11.21.

## REFERENCES

- Schwab, M.E., et al. 1985. Dissociated neurons regenerate into sciatic but not optic nerve explants in culture irrespective of neurotrophic factors. *J. Neurosci.* 5: 2415-2423.
- Schwab, M.E., et al. 1988. Oligodendrocytes and CNS myelin are nonpermissive substrates for neurite growth and fibroblast spreading *in vitro*. *J. Neurosci.* 8: 2381-2393.
- Caroni, P., et al. 1988. Two membrane protein fractions from rat central myelin with inhibitory properties for neurite growth and fibroblast spreading. *J. Cell Biol.* 106: 1281-1288.
- Spillmann, A.A., et al. 1998. Identification and characterization of a bovine neurite growth inhibitor (bNI-220). *J. Biol. Chem.* 273: 19283-19293.

## CHROMOSOMAL LOCATION

Genetic locus: RTN4R (human) mapping to 22q11.21; Rtn4r (mouse) mapping to 16 A3.

## SOURCE

Nogo-R (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Nogo-R of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16707 P, (100 µg 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

Nogo-R (N-20) is recommended for detection of Nogo-R 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Nogo-R (N-20) is also recommended for detection of Nogo-R in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Nogo-R siRNA (h): sc-42140, Nogo-R siRNA (m): sc-42141, Nogo-R shRNA Plasmid (h): sc-42140-SH, Nogo-R shRNA Plasmid (m): sc-42141-SH, Nogo-R shRNA (h) Lentiviral Particles: sc-42140-V and Nogo-R shRNA (m) Lentiviral Particles: sc-42141-V.

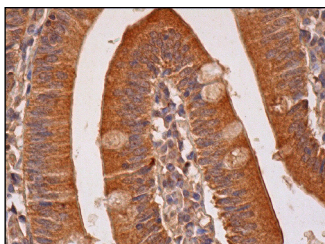
Molecular Weight of Nogo-R: 66 kDa.

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 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



Nogo-R (N-20): sc-16707. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Wang, K., et al. 2002. p75 interacts with the Nogo receptor as a co-receptor for Nogo, MAG and OMgp. *Nature* 420: 74-78.
- Miyazaki, K., et al. 2009. Changes of Nogo-A and receptor NgR in the lumbar spinal cord of ALS model mice. *Neurol. Res.* 31: 316-321.