SANTA CRUZ BIOTECHNOLOGY, INC.

Nogo-R (H-120): sc-25659

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. 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.
2. 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.
3. 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.
4. Spillmann, A.A., et al. 1998. Identification and characterization of a bovine neurite growth inhibitor (bNI-220). J. Biol. Chem. 273: 19283-19293.
5. GrandPre, T., et al. 2000. Identification of the Nogo inhibitor of axon regeneration as a Reticulon protein. Nature 403: 439-444.

CHROMOSOMAL LOCATION

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

SOURCE

Nogo-R (H-120) is a rabbit polyclonal antibody raised against amino acids 31-150 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.

Available as agarose conjugate for immunoprecipitation, sc-25659 AC, 500 µg/0.25 ml agarose in 1 ml.

STORAGE

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

APPLICATIONS

Nogo-R (H-120) 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), 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

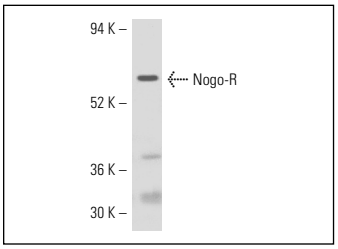
Nogo-R (H-120) is also recommended for detection of Nogo-R in additional species, including equine, canine, bovine and porcine.

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.

DATA



Nogo-R (H-120): sc-25659. Western blot analysis of Nogo-R expression in rat brain tissue extract.

SELECT PRODUCT CITATIONS

1. Wang, B., et al. 2008. Nogo-66 promotes the differentiation of neural progenitors into astroglial lineage cells through mTOR-STAT3 pathway. PLoS ONE 3: 1856.
2. Gao, Y., et al. 2010. Nogo-66 regulates Nanog expression through Stat3 pathway in murine embryonic stem cells. Stem Cells Dev. 19: 53-60.
3. Nagamoto-Combs, K., et al. 2010. Long-term gliosis and molecular changes in the cervical spinal cord of the rhesus monkey after traumatic brain injury. J. Neurotrauma 27: 565-585.
4. Xu, S., et al. 2011. Effect of lentiviral shRNA of Nogo receptor on rat cortex neuron axon outgrowth. Can. J. Neurol. Sci. 38: 133-138.
5. VanGuilder Starkey, H.D., et al. 2013. Increased hippocampal NgR1 signaling machinery in aged rats with deficits of spatial cognition. Eur. J. Neurosci. 37: 1643-1658.

RESEARCH USE

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