

DESCRIPTION

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| Species Reactivity | Human |
| Specificity | Detects human Nogo Receptor (NgR) in direct ELISAs and Western blots. In direct ELISAs, less than 25% cross-reactivity with recombinant mouse NgR is observed. |
| Source | Polyclonal Goat IgG |
| Purification | Antigen Affinity-purified |
| Immunogen | recombinant human NgR Cys27-Ser447 Accession # Q9BZR6 |
| Endotoxin Level | <0.10 EU per 1 µg of the antibody by the LAL method. |
| Formulation | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS. |

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

| | Recommended Concentration | Sample |
|--|---|--|
| Western Blot | 0.1 µg/mL | Recombinant Human Nogo Receptor/NgR Fc Chimera (Catalog # 1208-NG) |
| Blockade of Receptor-ligand Interaction | In a functional ELISA, 1-4 µg/mL of this antibody will block 50% of the binding of 1 µg/mL of Recombinant Rat MAG/Siglec-4a Fc Chimera (Catalog # 538-MG) to immobilized Recombinant Human Nogo R Fc Chimera (Catalog # 1208-NG) coated at 5 µg/mL (100 µL/well). At 100 µg/mL, this antibody will block >90% of the binding. | |

PREPARATION AND STORAGE

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| Reconstitution | Reconstitute at 0.2 mg/mL in sterile PBS. |
| Shipping | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| Stability & Storage | Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |

BACKGROUND

Nogo Receptor (NgR), also named reticulon 4 receptor, is a glycosylphosphoinositol (GPI)-anchored protein that belongs to the family of leucine-rich repeat (LRR) proteins (1). It is expressed predominantly in the central nervous systems in neurons and their axons. NgR plays an essential role in mediating axon growth inhibition induced by the structurally distinct myelin-derived proteins Nogo, myelin-associated glycoprotein (MAG), and myelin oligodendrocyte glycoprotein (Omgp) (2, 3). Human NgR cDNA encodes a 473 amino acid residues (aa) precursor with a 26 aa putative signal peptide, an LRR-type N-terminal region, eight LRR repeats, a cysteine-rich LRR-type C-terminal region, a GPI linkage domain and a 26 aa C-terminal propeptide that is removed in the mature form (1). All of the LRR domains within NgR are required for ligand binding and receptor oligomerization (4). NgR mediates its inhibitory actions by interacting with the p75 neurotrophin receptor (p75^{NTR}), a tumor necrosis factor receptor superfamily (TNFRSF) member also known for modulating the activities of the Trk family of receptor tyrosine kinases, and for inducing apoptosis in neurons and oligodendrocytes (5). Upon ligand binding, NgR binds to and activates the p75^{NTR}. The activated p75^{NTR} then sequesters the Rho guanine dissociation inhibitor (Rho-GDI) away from Rho and allows Rho to change into the active GTP-bound state which can interact with signaling proteins to suppress axonal growth and regeneration (4). The truncated extracellular domain of NgR has been shown to bind the myelin-derived inhibitors and block inhibition of axon growth by myelin (6).

References:

1. Fournier, A.E. *et al.* (2001) *Nature* **409**:341.
2. GrandPre, T. *et al.* (2002) *Nature* **417**:547.
3. Wang, K.C. *et al.* (2002) *Nature* **420**:74.
4. Barton, W.A. *et al.* (2003) *EMBO Journal* **22**:3291.
5. Yamashita, T. and M. Tohyama (2003) *Nature Neuroscience* **6**:461.
6. Fournier, A.S. *et al.* (2002) *J. Neurosci.* **22**:8876.