

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Nogo Receptor/NgR in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse Nogo Receptor/NgR is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 188428
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human Nogo Receptor/NgR Cys27-Ser447 (predicted) Accession # Q9BZR6
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	1 µg/mL	Recombinant Human Nogo Receptor/NgR Fc Chimera (Catalog # 1208-NG)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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 (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.