

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Nogo-A in direct ELISAs and Western blots. In direct ELISAs, approximately 5% cross-reactivity with recombinant rat Nogo-A (aa 543-725) and recombinant human Nogo-B is observed..
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Nogo-A Val566-Phe748 Accession # Q9NQC3
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 as a 0.2 µm filtered solution in PBS.

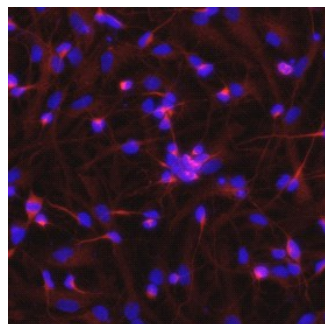
APPLICATIONS

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-A Fc Chimera, aa 566-748 (Catalog # 3515-NG)
Immunocytochemistry	5-15 µg/mL	See Below

DATA

Immunocytochemistry



Nogo-A in Rat Cortical Stem Cells.

Nogo-A was detected in immersion fixed 7 day differentiated rat cortical stem cells using 10 µg/mL Sheep Anti-Human Nogo-A Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3515) for 3 hours at room temperature. Cells were stained with the NorthernLights™ 557-conjugated Anti-Sheep IgG Secondary Antibody (red; Catalog # NL010) and counterstained with DAPI (blue). View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

PREPARATION AND STORAGE

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

Human Nogo-A (also reticulon-4) is a member of the reticulon family of transmembrane proteins. This family is characterized by the presence of a nonsignal sequence-containing N-terminus, a topologically conserved 200 amino acid (aa) C-terminus that contains two transmembrane domains with an ER-retention motif, and a punctate intracellular distribution within the ER that is reminiscent of a reticulum (1-4). In human, Nogo exists in five isoforms (5-7). The full length human form (Nogo-A) is 1192 aa in length and contains a 1018 aa N-terminus, a 21 aa transmembrane segment, a 94 aa connecting "loop", a second 21 aa transmembrane segment, and a 38 aa C-terminus. Three areas are of particular interest. One is a stretch of 66 aa within the 94 aa connecting loop. This segment is reported to bind to the GPI-linked Nogo receptor/p75 complex on axons and induce growth cone collapse (8-10). Two other areas in the N-terminus have also been discovered to have bioactivity (8, 11, 12). Based on rat, aa 57-184 in human (aa 59-172 in rat) should block fibroblast spreading, while aa 566-748 in human (aa 544-725 in rat) block neurite outgrowth and block fibroblast spreading (8, 12, 13). The exact topology of Nogo-A is unclear. The N- and C-termini may be extracellular with the "loop" region intracellular, or the situation could be reversed (13-15). Alternatively, the loop region and N-terminus may be on the same side of the membrane (3, 8). The four additional isoforms are shorter than Nogo-A (199 aa [Nogo-C], 373 aa [Nogo-B], 392 aa and 986 aa, respectively) (7). Although highly divergent, all contain the same C-terminal stretch, aa 1005-1192. Both Nogo-B and C are reported to complex with Nogo-A (16). Notably, Nogo-A is expressed in neurons, endothelial cells, oligodendrocytes, fibroblasts and myoblasts (12, 16-18). Human Nogo-A is 78% aa identical to mouse and rat Nogo-A overall, with 98% aa identity in the loop region and approximately 80% aa identity in the aa 566-748 segment.

References:

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