

Recombinant Rat Nogo-A/Nogo-66-Fc Chimera (carrier-free)

Catalog# / Size	761002 / 10 µg 761006 / 100 µg
Regulatory Status	RUO
Other Names	Reticulon-4, RTN-4, Foccen, Neurite outgrowth inhibitor (Nogg), Neuroendocrine-specific protein (NSP), NI220
Description	Rat Nogo-A, also known as Reticulon-4, is a member of reticulon family of transmembrane proteins. Nogo-A in rat exists in four isoforms. Isoform 1 is specifically expressed in brain and testis and weakly in heart and skeletal muscle. Isoform 2 is widely expressed except for the liver. Isoform 3 is expressed in brain, skeletal muscle and adipocytes. Isoform 4 is testis-specific. Nogo-A is one of three prototypical myelin associated neurite outgrowth inhibitory factors that may play a role in blocking the regeneration of the central nervous system in higher vertebrates. It is a negative regulator of axon-axon adhesion and neurite outgrowth. It facilitates neurite branching and regulates neurite fasciculation in the developing nervous system. It also regulates the radial migration of cortical neurons. In the adult CNS, Nogo-A is involved in the stabilization of wiring and the restriction of plasticity. The full length rat Nogo-A is 1163 amino acids long and contains 94 amino acids 'loop' that connects two transmembrane segments. Nogo-66 corresponds to a stretch of 66 amino acids within the 94 amino acids transmembrane connecting loop. Analysis of Nogo-A has shown that an axon-inhibiting domain of 66 amino acids is expressed at the extracellular surface and at the ER lumen of transfected cells and oligodendrocytes. Nogo-66 binds to Nogo receptor/p75 complex on axons and induces growth cone collapse.

Product Details

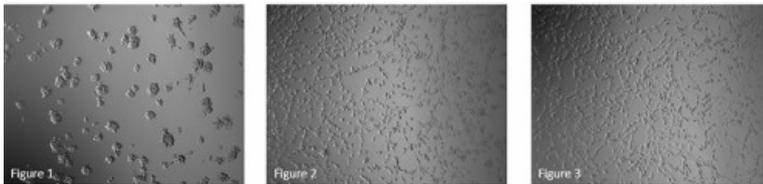
Source	Rat Nogo-A/Nogo-66, amino acids Arg1026-Leu1090 (Accession# Q9JK11) with mouse IgG2a Fc tag at the C-terminus, was expressed in 293E cells.
Molecular Mass	The 299 amino acid recombinant protein has a predicted molecular mass of approximately 33.9 kD. The DTT-reduced protein migrates at approximately 40 kD and non-reduced proteins migrate at approximately 72 kD by SDS-PAGE. The predicted N-terminal amino acid is Arg.
Purity	>95% as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in PBS, pH 7.2.
Endotoxin Level	Less than 0.1 EU per µg of protein as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	Measured by the ability of immobilized recombinant rat Nogo-Fc chimera to inhibit C6 glioma cell adhesion and spreading. Able to inhibit cell adhesion and spreading when immobilized at 6-30 µg/mL. 100 ng of protein, immobilized as a 3 µL droplet on a nitrocellulose-coated plate, is sufficient to significantly inhibit neurite outgrowth of E13 chick DRG neurons induced by laminin substrate.
Recommended Usage	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after

shipping on blue ice and are backed by our [100% satisfaction guarantee](#). If you have any concerns, contact us at tech@biolegend.com.

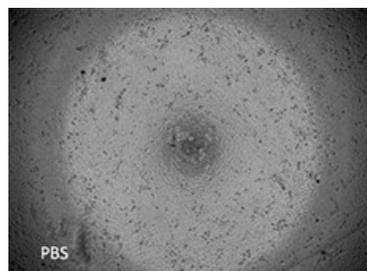
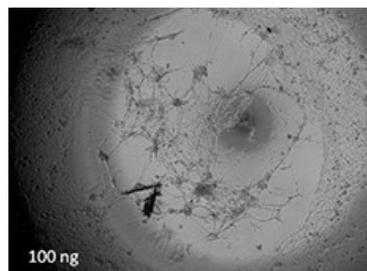
Antigen Details

Distribution	Specifically expressed in brain and testis and weakly in heart and skeletal muscle.
Function	Neurite outgrowth inhibition, growth cone collapse.
Interaction	CNS axons and cortical neurons.
Ligand/Receptor	NgR1/ RTN4R, PairB.
Bioactivity	Measured by the ability of immobilized protein to inhibit neurite outgrowth of dissociated E13 chick embryonic dorsal root ganglia (DRG) neurons.
Biology Area	Cell Adhesion, Cell Biology, Cell Motility/Cytoskeleton/Structure, Immunology, Innate Immunity, Neuroscience, Synaptic Biology
Molecular Family	Adhesion Molecules, Postsynaptic proteins
Antigen References	<ol style="list-style-type: none">1. Spillmann AA, <i>et al.</i> 1998. <i>J. Biol. Chem.</i> 273:19283.2. GrandPré T, <i>et al.</i> 2000. <i>Nature.</i> 403:439.3. Chen MS, <i>et al.</i> 2000. <i>Nature.</i> 403:434.4. Simonen M, <i>et al.</i> 2003. <i>Neuron.</i> 38:201.5. Voeltz GK, <i>et al.</i> 2006. <i>Cell.</i> 124:573.6. Atwal JK, <i>et al.</i> 2007. <i>Science.</i> 322(5903):967-70.7. Yang Y, <i>et al.</i> 2010. <i>Ann. Neurol.</i> 67:498.
Gene ID	83765

Product Data



(Figure 1) Immobilized recombinant rat Nogo-66-Fc chimera (7.5 µg/mL) is able to inhibit C6 cell adhesion and spreading. (Figure 2) A negative control protein (Recombinant mouse LAG3-Fc chimera Cat. No. 787104) with the same -Fc tag has no effect on C6 cell adhesion and spreading compared to PBS coated well (Figure 3).



Recombinant Rat Nogo-66 significantly inhibits DRG neurite outgrowth when immobilized as a 3 µL droplet containing 100 ng of protein.

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