Recombinant Rat Nogo-A Fc Chimera  
Catalog Number: 3098-NG

DESCRIPTION

Source  Mouse myeloma cell line, NS0-derived  
Rat Nogo-A (Met1-Val172)  
Accession # Q9JK11  
Mouse IgG2A (Glu98-Lys330)

IEGRMDP ...

N-terminal Sequence Analysis  Met1
Structure / Form  Disulfide-linked homodimer
Predicted Molecular Mass  45 kDa (monomer)

SPECIFICATIONS

SDS-PAGE  66-76 kDa, reducing conditions
Activity  Measured by its ability to inhibit neurite outgrowth of dissociated E13 chick embryonic dorsal root ganglia (DRG) neurons. Able to significantly inhibit neurite outgrowth when immobilized at 3 μg/mL on a nitrocellulose-coated microplate.
Endotoxin Level  <0.01 EU per 1 μg of the protein by the LAL method.
Purity  >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation  Lyophilized from a 0.2 μL mL filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution  Reconstitute at 400 μg/mL in PBS.
Shipping  The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage  Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
\- 12 months from date of receipt, -20 to -70 °C as supplied.
\- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
\- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Nogo, so named as a "No-Go" for neurite outgrowth, is a member of the reticulon family of transmembrane proteins, and is also called reticulon 4 (gene name RTN4) (1-4). Reticulons lack N-terminal signal sequences, share a conserved ~200 amino acid (aa) C-terminus that contains two transmembrane domains and an ER-retention motif, and show a punctate intracellular distribution within the endoplasmic reticulum (ER) that is reminiscent of a reticulum (1-3). The N-terminus of intracellular (ER) Nogo-A appears to face the cytoplasm (1-3). However, minor amounts of Nogo-A and Nogo-B are found in the plasma membrane with extracellular N-termini (4-6). Full length rat Nogo-A is a 1163 aa protein with a long (~899 aa) N-terminus that includes bioactive regions (aa 59-172 and 544-725), a transmembrane segment, a connecting loop that contains the bioactive Nogo-66 region, a second transmembrane segment, and a short C-terminus (3). The four Nogo isoforms share the Nogo66 segment, Nogo-A and Nogo-B share aa 1-172, and only Nogo-A contains aa 544-725 (1-3). Rat Nogo-A shares 78% and 91% aa sequence identity with human and mouse Nogo-A, respectively. Rat and human Nogo-A/B also share 78% aa sequence identity within aa 1-172 and 98% within the Nogo-66 loop region. Nogo-A is mainly expressed in oligodendrocytes of the central nervous system, but is also reported in fibroblasts, dorsal root ganglion neurons, macrophages and myoblasts (1-8). Nogo-B is mainly expressed in vascular endothelium and smooth muscle throughout the body (1, 4, 6, 9). The Nogo66 region binds the GPI-linked Nogo receptor/p75 complex on axons, inducing growth cone collapse (5, 7, 10, 11). Either aa 59-172 or 544-725 segments can block neurite outgrowth and fibroblast spreading (5, 6). Nogo-A/B aa 1-172 is also reported to regulate vascular remodeling through binding the Nogo-B receptor (NgbR/NUS1) on vascular cells, and to inhibit neuronal differentiation and promote glial formation from neural progenitors (4, 5, 6, 9, 12).

References: