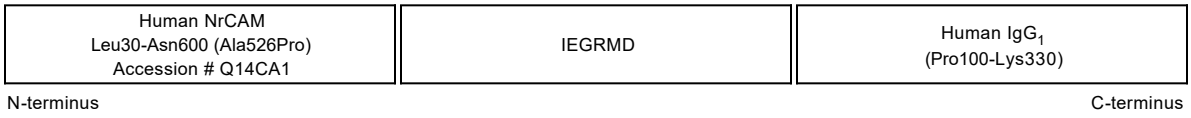
Recombinant Human NrCAM Fc Chimera

Catalog Number: 2034-NR

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived



N-terminal Sequence Analysis	Leu30
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	90 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	120-130 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of Y-79 human retinoblastoma cells. The ED_{50} for this effect is 0.8-4 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in MES and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 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

NrCAM, also known as Bravo, belongs to the L1 family of cell adhesion molecules which also includes L1CAM, Neurofascin, and CHL-1/L1CAM-2 (1). These molecules are type I transmembrane proteins that have 6 Ig-like domains and 4-5 fibronectin type III-like domains in their extracellular domain. L1 family cell adhesion molecules are expressed primarily in the nervous system where they share overlapping functions in controlling axonal growth and guidance (2). Mature human NrCAM is an approximately 200 kDa molecule that consists of a 1143 amino acid (aa) extracellular domain (ECD) with 6 Ig-like domains followed by 5 fibronectin type III domains; a 23 aa transmembrane segment, and a 114 aa cytoplasmic domain (3). Within the region of Ig-like domains, human NrCAM shares 92% aa sequence identity with mouse and rat NrCAM. Alternative splicing generates additional isoforms with deletions in the juxtamembrane region of the ECD plus short deletions near the N-terminus, between the 2nd and 3rd Ig-like domains, or following the 6th Ig-like domain. A 140 kDa soluble fragment of the ECD can be released by proteolytic cleavage (4, 5). NrCAM is expressed on cerebellar granule neurons, retinal ganglion cells (RGC), star pyramidal cells in visual cortex, thalamocortical axons, and glial cells (4, 6-11). It is found on both axons and dendritic spines (7, 9). NrCAM mediates homophilic adhesion as well as heterophilic adhesion with Contactin, Contactin-2/TAG1, Neurofascin, PTPβζ, and Integrin α4β1 (5, 12-15) and also interacts with Neuropilin-2, Plexin A3, and EphB2 (8-10). Depending on its interacting partners, NrCAM can promote or inhibit axon and neurite extension (6, 7, 11, 15) and mediate Semaphorin 3F induced neuronal growth cone collapse (9, 10). NrCAM plays an important role in the development of normal vision by regulating RGC axon pathfinding and mapping to the visual cortex (7, 8, 10). It is up-regulated in papillary thyroid carcinomas and the shed form can promote tumorigenesis (5, 16).

References:

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