Recombinant Mouse N-Cadherin Fc Chimera

Catalog Number: 6626-NC

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

Mouse N-Cadherin (Met1 - Ala724) Accession # NP_031690	IEGRMDP	Mouse IgG_{2A} (Glu98 - Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis: Asp160, Ser26, & Glu28

Predicted Molecular Mass: 88.8 kDa (monomer, mature protein) & 104.2 kDa (monomer, pro-protein)

SPECIFICATIONS

SDS-PAGE: (115-120) kDa & (130-135) kDa, reducing conditions

Activity: Measured by the ability of the immobilized protein to support the adhesion of U-118-MG human glioblastoma/astrocytoma cells. The ED_{50} for this effect is 0.1-0.5 µg/mL.

Endotoxin Level: <0.01 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 PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution: Reconstitute at 100 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

Neuronal Cadherin (N-Cadherin or NCAD), also known as Cadherin-2 (CDH2), is a 130 kDa type I membrane protein belonging to the Cadherin superfamily of calcium-dependent adhesion molecules. Cadherins are involved in multiple processes including embryonic development, cell migration, and maintenance of epithelial integrity (1, 2). Mouse N-Cadherin is synthesized with a 25 amino acid (aa) signal peptide and a 134 aa N-terminal propeptide. The mature cell surface-expressed protein consists of a 565 amino acid (aa) extracellular domain (ECD) that contains five Cadherin repeats, a 21 aa transmembrane segment, and a 161 aa cytoplasmic domain (3). Within the ECD, mouse N-Cadherin shares 98% and 99% aa sequence identity with human and rat N-Cadherin, respectively. In the nervous system, N-Cadherin mediates adhesion between the opposing faces of developing neuronal synapses and between Schwann cells and neuronal axons (4, 5). It interacts *in cis* or *in trans* homophilically and with the GluR2 subunit of neuronal AMPA receptors (1, 6). During synaptic maturation, its expression is lost from inhibitory terminals but maintained at excitatory terminals (5). ADAM10-mediated shedding of the N-Cadherin ECD alters cell-cell adhesion, synaptic development, and AMPA receptor activity (7, 8). N-Cadherin can also be cleaved at multiple additional sites within the intracellular or extracellular domains by Calpain, γ-Secretase, and several MMPs (9 - 13). Cleavage of N-Cadherin in atherosclerotic plaques contributes alternatively to vascular smooth muscle cell proliferation (MMP-9 and -12) or apoptosis (MMP-7) (12, 13). Aberrant cell surface expression of the pro and mature forms of N-Cadherin in cancer results in increased tumor progression and invasiveness (14, 15). N-Cadherin also mediates the adhesion between hematopoeitic progenitor cells and mesenchymal stromal cells of the bone marrow (16).

References:

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