**DESCRIPTION**

**Source**
Mouse myeloma cell line, NS0-derived

<table>
<thead>
<tr>
<th>Mouse N-Cadherin (Met1 - Ala724)</th>
<th>IEGRMDP</th>
<th>Mouse IgG2A (Glu98 - Lys330)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accession # NP_031690</td>
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</table>

**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 $E_{50}$ 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 hematopoietic progenitor cells and mesenchymal stromal cells of the bone marrow (16).

**References:**