

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects mouse N-Cadherin in direct ELISAs and Western blots. In direct ELISAs approximately 50% cross-reactivity with recombinant mouse N-Cadherin is observed, and no cross-reactivity with recombinant human (rh) E-Cadherin, rhP-Cadherin, rhVE-Cadherin, rhCadherin-4, -8, -11, -12, or -13 is observed.
<b>Source</b>	Monoclonal Mouse IgM Clone # 691723
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse N-Cadherin Asp160-Ala724 Accession # P19022.4
<b>Conjugate</b>	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	HeLa human cervical epithelial carcinoma cell line

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

#### 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). Human 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, human N-Cadherin shares 98% aa sequence identity with mouse and rat N-Cadherin. 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:

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