

N-cadherin Monoclonal Antibody (3B9)

Catalog Number 33-3900

Product Data Sheet

Details		Species Reactivity	
Size	100 µg	Tested species reactivity	Chicken, Human, Mouse, Porcine, Rat
Host / Isotype	Mouse IgG1, kappa	Published Species Reactivity	Equine, Hamster, Human, Mouse, Not Applicable, Non-human primate, Rabbit, Rat, Tag
Class	Monoclonal	Tested Applications	Dilution *
Type	Antibody	Immunocytochemistry (ICC)	1-3 µg/mL
Clone	3B9	Immunofluorescence (IF)	1-3 µg/mL
Immunogen	Recombinant domain corresponding to the intracellular domain of chicken N-Cadherin	Immunohistochemistry (IHC)	Assay Dependent
Conjugate	Unconjugated	Immunohistochemistry (Paraffin) (IHC (P))	1-5 µg/mL
Form	Liquid	Immunoprecipitation (IP)	3-5 µg
Concentration	0.5mg/ml	Western Blot (WB)	0.5-1 µg/mL
Purification	Protein A	Published Applications	
Storage Buffer	PBS, pH 7.4	Western Blot (WB)	See 80 publications below
Contains	0.1% sodium azide	Immunofluorescence (IF)	See 41 publications below
Storage Conditions	-20°C	Miscellaneous (Misc)	See 38 publications below
		Immunohistochemistry (IHC)	See 28 publications below
		Immunohistochemistry (Paraffin) (IHC (P))	See 18 publications below
		Immunocytochemistry (ICC)	See 13 publications below
		Immunohistochemistry (Frozen) (IHC (F))	See 8 publications below
		Immunoprecipitation (IP)	See 4 publications below
		Flow Cytometry (Flow)	See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product Specific Information

This antibody is specific for N-cadherin and does not cross-react with other cadherin family members including P- and E-cadherins.

For IHC with this antibody use formalin-fixed, paraffin-embedded tissue and heat-induced epitope retrieval.

Background/Target Information

N-cadherin is a 140 kDa protein belonging to a multifunctional family of transmembrane glycoproteins, which promote and maintain cellular adhesion in virtually all multicellular organisms that mediate calcium-dependent intercellular adhesion. The encoded protein is comprised of five extracellular cadherin repeats, a transmembrane region, and a highly conserved cytoplasmic tail. The protein functions during gastrulation and is required for establishment of left-right asymmetry. At certain central nervous system synapses, presynaptic to postsynaptic adhesion is mediated at least in part by this gene product. The cadherin superfamily comprises over forty proteins which are, on average, 50-60% homologous. Cadherin expression is required for the assembly of cells into solid tissues and importantly, cadherins are expressed in a tissue specific fashion. Cadherins are involved in controlling morphogenetic movements during development and regulate cell surface adhesion through homotypic adhesion with the same cadherin species. Homotypic cellular interactions are promoted by homophilic interactions between the extracellular regions of like cadherin molecules on neighboring cells. Recent crystal structure analysis of an extracellular cadherin domain suggests that individual cadherin molecules cooperate to form a linear cell adhesion zipper. In adherens junctions, N-cadherin's function is dependent on its association with the actin cytoskeleton and is mediated through interactions between the C-terminal region of N-cadherin and the small cytoplasmic catenin proteins. Specifically, cadherins are anchored to the actin cytoskeleton by interaction with beta-catenin and gamma-catenin which both bind to the actin binding protein alpha-catenin. The stability of this association is regulated by

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phosphorylation and dephosphorylation of beta-catenin. The interaction of beta-catenin with the cytoplasmic tail of cadherins and other cytoplasmic proteins, including Tcf-family transcription factors and the tumor suppressor protein APC, is thought to be mediated through a region of the beta-catenin molecule containing multiple repeats of the 42 amino acid armadillo sequence motif. In addition to playing important roles in differentiation and tissue morphogenesis, cadherins also appear to play a significant role in modulating tumor invasion and metastasis. The expression of E-cadherin correlates inversely with the motile and invasive behavior of tumor cells. In addition, the tissue specificity of cadherin subtypes are becoming valuable markers for the identification and differential diagnosis of certain cancers.

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