Qty: 100 µg/200 µl
Mouse anti-α-Catenin
Catalog No. 13-9700
Lot No.

Mouse anti-α-Catenin

FORM
This monoclonal antibody is highly purified from mouse ascites by peptide-affinity chromatography. It is supplied as a 200 µl aliquot at a concentration of 0.5 mg/ml in phosphate buffered saline, pH 7.4, containing 0.1% sodium azide.

CLONE: α CAT-7A4 **ISOTYPE:** IgG_1-kappa

IMMUNOGEN
Synthetic peptide derived from the C-terminus of mouse α-catenin.

SPECIFICITY
This monoclonal antibody is specific for the 102 kDa α-catenin protein and does not cross-react with the related β-catenin or γ-catenin proteins.

REACTIVITY
Species Reactivity: Human, Mouse, Rat, Chicken, Xenopus.
Lysates Tested: HeLa cells, A431 cells, WI-38 human fibroblasts, *Xenopus* cytosol, NIH 3T3 cells.

USAGE
The concentrations below are only starting recommendations. Optimal concentrations of this antibody should be determined by the investigator for each specific application.

Western Blotting[17]:	1 µg/ml
ELISA:	0.1 µg/ml-1µg/ml
Immunoprecipitation[17]:	5 µg
Immunofluorescence:	2-5 µg/ml
Immunohistochemistry*:	2-10 µg/ml

*Has been tested on formalin-fixed, paraffin-embedded tissue. Heat-Induced Epitope Retrieval (HIER) is required.

STORAGE
This antibody should be stored at 2-8°C for at least one month. For long term storage, -20°C is recommended; however, repeated freezing and thawing should be avoided.

BACKGROUND
Adherens junctions (AJ) (also referred to as zonula adherens) are required for both the establishment and maintenance of epithelial layers[2]. In addition, these junctions have been identified in several other cell types including cardiac myocytes and fibroblasts[2]. AJ subserve several important functions including: mediating intercellular adhesion, sensing the presence of neighboring cells, and anchoring the actin cytoskeleton[2,3]. AJ are multiprotein complexes that are assembled around cell adhesion molecules called cadherins. Cadherins are a multifunctional family of Ca^{2+}-dependent, transmembrane, glycoproteins which promote cell-cell adhesion[4]. The cadherin extracellular domain mediates homophilic interactions

(cont'd)

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between like cadherin molecules on neighboring cells, while the intracellular domain interacts with several cytoplasmic proteins which include: α-catenin, β-catenin, γ-catenin (plakoglobin), and the tyrosine kinase substrate p120^{cas}[1,5,6,7,8,9]. Cadherin-catenin interactions are required for complete cadherin activity and regulate the interaction between cadherins and the actin-based cytoskeleton[1,4,6,8,9,10]. In fact, deletion of the cadherin cytoplasmic domain produces an adhesion-defective molecule that is unable to interact with the cytoskeleton[4,11].

α-catenin is a 102 kDa protein which is related to the cytoskeletal protein vinculin[1,12]. Vinculin associates with both cell-cell and cell-extracellular matrix adherens-type junctions, and has been shown to interact with both α-actinin and actin[14,15]. The homology between α-catenin and vinculin is localize to three major regions (amino-terminal, central, and carboxy-terminal portions) with the c-termini exhibiting the highest overall homology[1]. Interestingly, it is the carboxy terminal domain of vinculin which is responsible for its self-association properties[1]. The homology between the c-termini of catenin and vinculin lead to speculation that α-catenin can self-associate and/or co-associate with vinculin thereby linking the cadherin/catenin complex to the cytoskeleton[1,10,12,13]. However, recent studies indicate that cadherin/catenin complexes are linked to the actin cytoskeleton via a direct association between α-actinin and α-catenin[10]. In addition, the α-catenin protein has been found to posses both actin binding and bundling activities[15].

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Mouse anti-γ-Catenin	PG-11E4	13-8500
Rabbit anti-ZO-1	Polyclonal	61-7300
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Rat anti-E-Cadherin	ECCD-1	13-1800
Rat anti-E-Cadherin	ECCD-2	13-1900
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rec-Protein G	Sepharose® 4B	10-1241

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