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Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2)

Catalog # ABO14947

Specification

Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) - Product Information

Application	**WB, IHC, FC**
Primary Accession	P35221
Host	**Mouse**
Isotype	**Mouse IgG1**
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Format	**Lyophilized**

Description
Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) . Tested in Flow Cytometry, IHC, WB applications. This antibody reacts with Human, Mouse, Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) - Additional Information

Gene ID 1495

Other Names
Catenin alpha-1 {ECO:0000312|HGNC:HGNC:2509}, Alpha E-catenin {ECO:0000312|HGNC:HGNC:2509}, Cadherin-associated protein {ECO:0000312|HGNC:HGNC:2509}, Renal carcinoma antigen NY-REN-13, CTNNA1 (HGNC:2509)

Calculated MW
100 kDa KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat
 Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml, Human
 Flow Cytometry, 1-3 µg/1x10^6 cells, Human

Subcellular Localization
Cytoskeleton. Cell membrane. Peripheral membrane protein. Cytoplasmic side. Adherens junction. Cell junction.

Tissue Specificity
Expressed ubiquitously in normal tissues.

Contents
Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg NaN₃.

Immunogen
E.coli-derived human CTNNA1 recombinant protein (Position: D143-D292). Human CTNNA1 shares 98% amino acid (aa) sequence identity with mouse CTNNA1.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross-reactivity with other proteins.

Storage	**Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.**

Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) - Protein Information

Name CTNNA1 (HGNC:2509)

Function
Associates with the cytoplasmic domain of a variety of cadherins. The association of catenins to cadherins produces a complex which is linked to the actin filament network, and which seems to be of primary importance for cadherins cell-adhesion properties. Can associate with both E- and N-cadherins. Originally believed to be a stable component of E-cadherin/catenin adhesion complexes and to mediate the linkage of cadherins to the actin cytoskeleton at adherens junctions. In contrast, cortical actin was found to be much more dynamic than E-cadherin/catenin complexes and CTNNA1 was shown not to bind to F-actin when assembled in the complex suggesting a different linkage between actin and adherens junctions components. The homodimeric form may regulate actin filament assembly and inhibit actin branching by competing with the Arp2/3 complex for binding to actin filaments. Involved in the regulation of WWTR1/TAZ, YAP1 and TGFB1- dependent SMAD2 and SMAD3 nuclear accumulation (By similarity). May play a crucial role in cell differentiation.

Cellular Location
Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:P26231}. Cell junction, adherens junction. Cell membrane {ECO:0000250|UniProtKB:P26231}; Peripheral membrane protein; Cytoplasmic side {ECO:0000250|UniProtKB:P26231}. Cell junction Cytoplasm {ECO:0000250|UniProtKB:Q9PVF8}. Nucleus. Note=Found at cell-cell boundaries and probably at cell-matrix boundaries. {ECO:0000250|UniProtKB:P26231}

Tissue Location
[Isoform 1]: Ubiquitously expressed in normal tissues.

Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence

- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) - Images

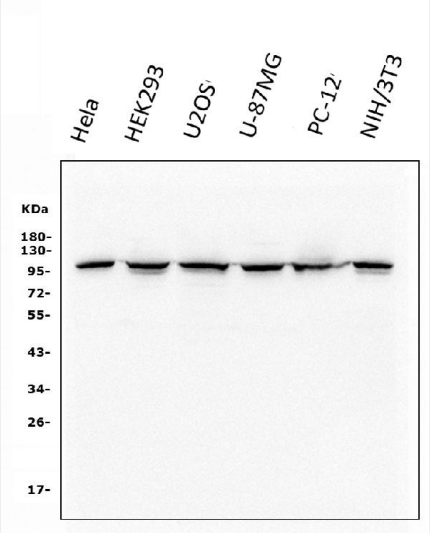

Figure 1. Western blot analysis of CTNNA1 using anti-CTNNA1 antibody (M01617-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human Hela whole cell lysates;
Lane 2: human HEK293 whole cell lysates;
Lane 3: human U20S whole cell lysates;
Lane 4: human U-87MG whole cell lysates;
Lane 5: rat PC-12 whole cell lysates;
Lane 6: mouse NIH/3T3 whole cell lysates
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-CTNNA1 antigen affinity purified monoclonal antibody (Catalog # M01617-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for CTNNA1 at approximately 100KD. The expected band size for CTNNA1 is at 100KD.

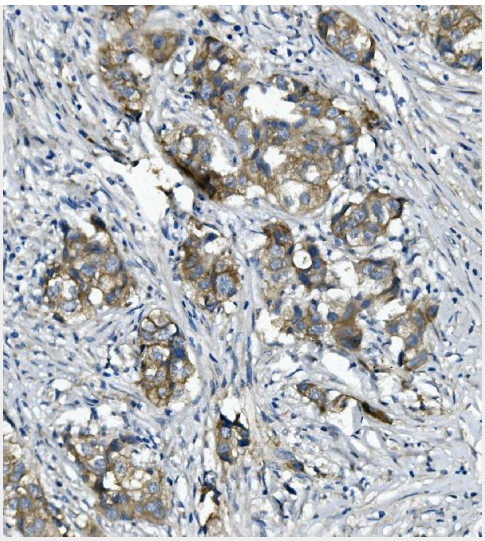

Figure 2. IHC analysis of CTNNA1 using anti-CTNNA1 antibody (M01617-1).
CTNNA1 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-CTNNA1 Antibody (M01617-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

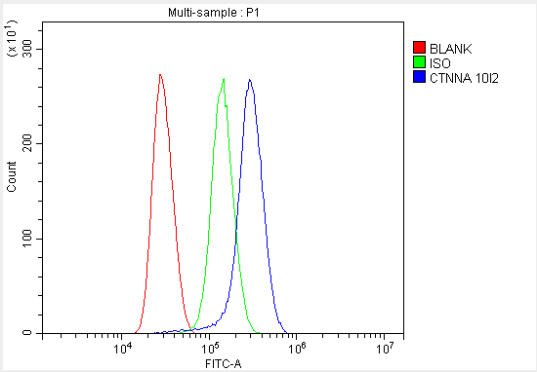

Figure 3. Flow Cytometry analysis of Jurkat cells using anti-CTNNA1 antibody (M01617-1). Overlay histogram showing Jurkat cells stained with M01617-1 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-CTNNA1 Antibody (M01617-1,1 µg/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x106) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Anti-alpha 1 Catenin/CTNNA1 Antibody Picoband™ (monoclonal, 10I2) - Background

CTNNA1, also known as Catenin alpha-1 or Catenin (cadherin-associated protein), alpha 1, is a protein that in humans is encoded by the CTNNA1 gene. It is mapped to 5q31.2. When surface epithelium CTNNA1 was ablated, hair follicle development was blocked and epidermal morphogenesis was dramatically affected, with defects in adherens junction formation, intercellular adhesion, and epithelial polarity. In vitro, CTNNA1 null keratinocytes were poorly contact inhibited and grew rapidly. These differences were not dependent upon intercellular adhesion and were in marked contrast to keratinocytes conditionally null for another essential intercellular adhesion protein, desmoplakin Knockout keratinocytes exhibited sustained activation of the Ras-MAPK

cascade due to aberrations in growth factor responses. It is concluded that features of precancerous lesions often attributed to defects in cell cycle regulatory genes can be generated by compromising the function of CTNNA1.