

## Background

$\alpha$ -catenins are cadherin interacting proteins with homology to vinculin. Three  $\alpha$ -catenin genes have been described including  $\alpha$ 1-catenin ( $\alpha$ E-Catenin),  $\alpha$ 2-catenin ( $\alpha$ N-catenin), and  $\alpha$ 3-catenin ( $\alpha$ T-catenin).  $\alpha$ 1-catenin has 81% homology with  $\alpha$ 2-catenin and 60% homology with  $\alpha$ 3-catenin. These  $\alpha$ -catenin isoforms may have similar roles since each binds cadherins. However, their expression patterns are both overlapping and distinct.  $\alpha$ 1-catenin was identified in epithelial cells, and is expressed in various cell types.  $\alpha$ 2-catenin is enriched in the nervous system, and  $\alpha$ 3-catenin is expressed highest in testis and heart. Phosphorylation may regulate the activity of  $\alpha$ 1-catenin, since tyrosine phosphorylation of Tyr-148 occurs during intercellular adhesion. This site is dephosphorylated by SHP2, which inhibits  $\alpha$ 1-catenin binding to  $\beta$ -catenin and translocation to the plasma membrane. Phosphorylation of  $\alpha$ 1-catenin at Tyr-148 may be important for inhibition of cell transformation, and dephosphorylation of this site may be important during SHP2-mediated cell transformation.

## Background References

Herrenknecht, K. et al. (1991) Proc Natl Acad Sci U S A. 88(20):9156.  
Hirano, S. et al. (1992) Cell. 70(2):293.  
Janssens, B. et al. (2001) J Cell Sci. 114(17):3177.

## Applications

Blocking 1:1000  
ELISA 50 ng/well

End user should determine optimal dilution for their particular applications and experiments.  
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

## Specificity

The peptide is specifically recognized by  $\alpha$ 1-Catenin (a.a. 143-153) (CP3431) in ELISA, and has been shown to block the reactivity of CP3431 in Western blot. In addition, the peptide is recommended for use in blocking CP3431 reactivity in immunocytochemistry.

\*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

## Peptide Sequence

$\alpha$ 1-Catenin synthetic peptide corresponds to amino acid residues 143 to 153 in human  $\alpha$ 1-Catenin. This peptide sequence is highly conserved in rat and mouse  $\alpha$ 1-Catenin, and has some homology to  $\alpha$ 2-Catenin or  $\alpha$ 3-Catenin.

## Buffer and Storage

Blocking Peptide is supplied in 50 $\mu$ l phosphate-buffered saline and 0.05% sodium azide. Store at  $-20^{\circ}$ C. Stable for 1 year.

## Related Products

CP3431  $\alpha$ 1-Catenin (a.a. 143-153) Rabbit Polyclonal  
CP3451  $\alpha$ 1-Catenin (Tyr-148), phospho-specific Rabbit Polyclonal  
CX3455 phospho- $\alpha$ 1-Catenin (Tyr-148) Blocking Peptide  
CK6120  $\beta$ -Catenin Phospho-Regulation Antibody Sampler Kit  
CK6150  $\gamma$ -Catenin Phospho-Regulation Antibody Sampler Kit

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