

## Background

$\beta$ -Catenin is a 92 kDa protein that binds to the cytoplasmic tail of E-Cadherin. The cadherins, transmembrane adhesion molecules, are found with catenins at adherens junctions. Deletions in the cytoplasmic domain of E-Cadherin eliminate catenin binding and result in a loss of cell adhesion. Tyrosine phosphorylation of  $\beta$ -Catenin can regulate its interaction with critical components of adherens junctions. Both Fer and Fyn Kinases phosphorylate tyrosine 142 *in vitro*. Overexpression of these kinases in epithelial cells disrupts interactions between  $\alpha$ - and  $\beta$ -Catenins. The phosphorylation of tyrosine 142 may act as a switch from the transcriptional to the adhesive role of  $\beta$ -Catenin. Src family kinases can also phosphorylate tyrosine 86, 489, and 654 in  $\beta$ -Catenin. Tyr-654 phosphorylation regulates  $\beta$ -Catenin binding to E-cadherin, while c-Abl phosphorylation of Tyr-489 decreases  $\beta$ -Catenin binding to N-Cadherin and leads to nuclear translocation and transcriptional activation.

## Background References

- Roura, S. et al. (1999) *J Biol Chem.* 274(51):36734.  
Piedra, J. et al. (2003) *Mol. Cell. Biol.* 23(7):2287.  
Brembeck, F.H. et al. (2004) *Genes Dev.* 18(18):2225.

## 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  $\beta$ -Catenin (Tyr-489) phospho-specific antibody (CP2961) in ELISA, and has been shown to block the reactivity of CP2961 during Western blot. In addition, the peptide is recommended for use in blocking CP2961 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

Phospho- $\beta$ -Catenin (Tyr-489) synthetic peptide corresponds to amino acid residues around tyrosine 489 of human  $\beta$ -Catenin. This peptide sequence is highly conserved in rat and mouse  $\beta$ -Catenin, and has high homology to the conserved site in  $\gamma$ -Catenin (Tyr-480).

## Buffer and Storage

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

## Related Products

- CP1061  $\beta$ -Catenin (N-terminal) Rabbit Polyclonal  
CP1191  $\beta$ -Catenin (Tyr-86), phospho-specific Rabbit Polyclonal  
CP1081  $\beta$ -Catenin (Tyr-142) $\gamma$ -Catenin (Tyr-133)], phospho-specific Rabbit  
CP2961  $\beta$ -Catenin (Tyr-489) $\gamma$ -Catenin (Tyr-480)], phospho-specific Rabbit  
CX1195 phospho- $\beta$ -Catenin (Tyr-86) Blocking Peptide

FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.