Revision 1

#13061 Store at -20C

Phospho-α-E-Catenin (Ser652) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	100	Rabbit	#P35221	1495

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

Phospho-α-E-Catenin (Ser652) Antibody recognizes endogenous levels of α-E-catenin protein only when phosphorylated at Ser652.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser652 of human α-E-catenin protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Adherens junctions are dynamic structures that form cell-cell contacts and are important in development, differentiation, tissue integrity, morphology and cell polarity. They are composed of the transmembrane proteins, cadherins, which bind cadherins on adjacent cells in a calcium-dependent manner. On the cytoplasmic side of adherens junctions, the classic model states that cadherins are linked to the cytoskeleton through β- and α-catenin. α-E-catenin is ubiquitously expressed, α-N-catenin is expressed in neuronal tissue, and α-T-catenin is primarily expressed in heart tissue. Research studies have demonstrated that loss of E-cadherin and α-E-catenin occurs during the progression of several human cancers, indicating that the breakdown of adherens junctions is important in cancer progression (reviewed in 1).

Research studies also suggest that, rather than acting as a static link between cadherins and actin, α-catenin regulates actin dynamics directly, possibly by competing with the actin nucleating arp2/3 complex (2,3). α-catenin also plays a role in regulating β-catenin-dependent transcriptional activity, affecting differentiation and response to Wnt signaling. α-catenin binds to β-catenin in the nucleus, preventing it from regulating transcription, and levels of both proteins appear to be regulated via proteasome-dependent degradation (4).

Phosphorylation of α-E-catenin has been shown to be a functionally important post-translational modification. For example, phosphorylation at Ser641 by casein kinase 2 modulates interactions between α-E-catenin and β-catenin (5). Mass spectrometry studies have identified phosphorylation of α-E-catenin at Ser652 as a modification in a variety of cell types (6-8), although the functional significance of this modification remains to be determined.

Background References

1. Kobielak, A. and Fuchs, E. (2004) *Nat Rev Mol Cell Biol* 5, 614-25.
2. Yamada, S. et al. (2005) *Cell* 123, 889-901.
3. Drees, F. et al. (2005) *Cell* 123, 903-15.
4. Hwang, S.G. et al. (2005) *J Biol Chem* 280, 12758-65.
5. Ji, H. et al. (2009) *Mol Cell* 36, 547-59.
6. Rigbolt, K.T. et al. (2011) *Sci Signal* 4, rs3.
7. Chen, L. et al. (2010) *J Proteome Res* 9, 174-8.
8. Brill, L.M. et al. (2009) *Cell Stem Cell* 5, 204-13.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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