

#4650 Store at -20°C

Vinculin 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, W-S	H M R Mk Dg	Endogenous	124	Rabbit	#P18206-2	7414

Product Usage Information	Application Western Blotting Simple Western™	Dilution 1:1000 1:50 - 1:250
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	Vinculin Antibody detects endogenous levels of total vinculin protein. This antibody also reacts with metavinculin, a 145 kDa splice variant of vinculin.	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human vinculin protein. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	Vinculin is a cytoskeletal protein that plays an important role in the regulation of focal adhesions and embryonic development (1-4). Three structural vinculin domains include an amino-terminal head, a short, flexible proline-rich region and a carboxy-terminal tail (1). In the inactive state, the head and tail domains of vinculin interact to form a closed confirmation. The open and active form of vinculin translocates to focal adhesions where it is thought to be involved in anchoring F-actin to the membrane and regulation of cell migration (2). Phospholipid binding to the tail domain and subsequent phosphorylation of vinculin at Ser1033 and Ser1045 by PKC-α and Tyr100 and Tyr1065 by Src kinases weakens the head-tail interaction (5,6). This change in vinculin allows the binding of a number of other proteins, including talin, α-actinin and paxillin, which disrupts the head-tail interaction and initiates the conformational change from the inactive to active state (2,4). Vinculin deficiencies are associated with a decrease in cell adhesion and an increase in cell motility, suggesting a possible role in metastatic growth (7,8). This is supported by a demonstrated relationship between decreased vinculin expression and increased carcinogenesis and metastasis in colorectal carcinoma (9).	
Background References	1. Izard, T. et al. (2004) <i>Nature</i> 427, 171-5. 2. Humphries, J.D. et al. (2007) <i>J Cell Biol</i> 179, 1043-57. 3. Witt, S. et al. (2004) <i>J Biol Chem</i> 279, 31533-43. 4. Xu, W. et al. (1998) <i>Development</i> 125, 327-37. 5. Ziegler, W.H. et al. (2002) <i>J Biol Chem</i> 277, 7396-404. 6. Zhang, Z. et al. (2004) <i>Mol Biol Cell</i> 15, 4234-47. 7. Rodríguez Fernández, J.L. et al. (1993) <i>J Cell Biol</i> 122, 1285-94. 8. Samuels, M. et al. (1993) <i>J Cell Biol</i> 121, 909-21. 9. Yang, H.J. et al. (2010) <i>Cancer Invest</i> 28, 127-34.	

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	WB: Western Blotting W-S: Simple Western™
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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