

#43248 Store at -20°C

PD-1 (EH33) Mouse mAb



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Applications: IHC-Bond, IHC-P	Reactivity: H	Sensitivity: Endogenous	Source/Isotype: Mouse IgG2a	UniProt ID: #Q15116	Entrez-Gene Id: 5133
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Product Usage Information	Application IHC Leica Bond Immunohistochemistry (Paraffin)	Dilution 1:100 1:200
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody. For a carrier-free (BSA and Azide) version of this product see product #60847.	
Specificity / Sensitivity	PD-1 (EH33) Mouse mAb recognizes transfected and endogenous levels of total PD-1 protein by immunohistochemistry on formalin-fixed paraffin-embedded tissue sections.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the amino terminus of human PD-1 protein.	
Background	The programmed cell death 1 protein (PD-1, PDCD1, CD279) is a member of the CD28 family of immunoreceptors that regulate T cell activation and immune responses (1-3). The PD-1 protein contains an extracellular Ig V domain, a transmembrane domain, and a cytoplasmic tail that includes an immunoreceptor tyrosine-based inhibitory motif (ITIM) and an immunoreceptor tyrosine-based switch motif (ITSM). PD-1 is activated by the cell surface ligands PD-L1 and PD-L2 (4). Upon activation, PD-1 ITIM and ITSM phosphorylation leads to the recruitment of the protein tyrosine phosphatases SHP-1 and SHP-2, which suppress TCR signaling (5-7). In addition to activated T cells, PD-1 is expressed in activated B cells and monocytes, although its function in these cell types has not been fully characterized (8). The PD-1 pathway plays an important role in immune tolerance (3); however, research studies show that cancer cells often adopt this pathway to escape immune surveillance (9). Consequently, blockade of PD-1 and its ligands is proving to be a sound strategy for neoplastic intervention (10).	
Background References	<ol style="list-style-type: none"> 1. Ishida, Y. et al. (1992) <i>EMBO J</i> 11, 3887-95. 2. Shinohara, T. et al. (1994) <i>Genomics</i> 23, 704-6. 3. Nishimura, H. et al. (1999) <i>Immunity</i> 11, 141-51. 4. Freeman, G.J. et al. (2000) <i>J Exp Med</i> 192, 1027-34. 5. Yokosuka, T. et al. (2012) <i>J Exp Med</i> 209, 1201-17. 6. Sheppard, K.A. et al. (2004) <i>FEBS Lett</i> 574, 37-41. 7. Chemnitz, J.M. et al. (2004) <i>J Immunol</i> 173, 945-54. 8. Thibault, M.L. et al. (2013) <i>Int Immunol</i> 25, 129-37. 9. Dong, H. et al. (2002) <i>Nat Med</i> 8, 793-800. 10. Topalian, S.L. et al. (2012) <i>Curr Opin Immunol</i> 24, 207-12. 	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Applications Key	IHC-Bond: IHC Leica Bond IHC-P: Immunohistochemistry (Paraffin)
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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