Revision 7

Store at -20C

#84651

PD-1 (Intracellular Domain) (D7D5W) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-Bond, IHC-P, IF-F, IF-IC, FC-FP	M	Endogenous	40-75	Rabbit IgG	#Q02242	18566

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
IHC Leica Bond	1:50 - 1:200
Immunohistochemistry (Paraffin)	1:100 - 1:400
Immunofluorescence (Frozen)	1:100 - 1:400
Immunofluorescence (Immunocytochemistry)	1:100 - 1:400
Flow Cytometry (Fixed/Permeabilized)	1:100 - 1:400

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 free) version of this product see product #55789.

Specificity/Sensitivity

PD-1 (Intracellular Domain) (D7D5W) XP® Rabbit mAb recognizes endogenous levels of total PD-1 protein.

Species predicted to react based on 100% sequence homology

Rat, Hamster

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala242 of mouse 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

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2. Shinohara, T. et al. (1994) *Genomics* 23, 704-6.
3. Nishimura, H. et al. (1999) *Immunity* 11, 141-51.
4. Freeman, G.J. et al. (2000) *J Exp Med* 192, 1027-34.
5. Yokosuka, T. et al. (2012) *J Exp Med* 209, 1201-17.
6. Sheppard, K.A. et al. (2004) *FEBS Lett* 574, 37-41.
7. Chemnitz, J.M. et al. (2004) *J Immunol* 173, 945-54.
8. Thibult, M.L. et al. (2013) *Int Immunol* 25, 129-37.
9. Dong, H. et al. (2002) *Nat Med* 8, 793-800.
10. Topalian, S.L. et al. (2012) *Curr Opin Immunol* 24, 207-12.

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

W: Western Blotting **IP:** Immunoprecipitation **IHC-Bond:** IHC Leica Bond **IHC-P:** Immunohistochemistry (Paraffin) **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

M: Mouse

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