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PDL1 Antibody [8E12]

Catalog # ASC12136

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q9NZQ7
Other Accession	NP_054862
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	CD274
Calculated MW	33275

Additional Information

Gene ID	29126
Alias Symbol	CD274
Other Names	PD-L1 Antibody: Programmed cell death 1 ligand-1, programmed death ligand 1, PDL1, PDL-1, B7-H1
Reconstitution & Storage	PD-L1 antibody can be stored at 4˚C for three months and -20˚C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	PDL1 Antibody [8E12] is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD274 (HGNC:17635)
Function	Plays a critical role in induction and maintenance of immune tolerance to self (PubMed:11015443, PubMed:28813410, PubMed:28813417, PubMed:31399419). As a ligand for the inhibitory receptor PDCD1/PD-1, modulates the activation threshold of T-cells and limits T-cell effector response (PubMed:11015443, PubMed:28813410, PubMed:28813417, PubMed:36727298). Through a yet unknown activating receptor, may costimulate T-cell subsets that predominantly produce interleukin-10 (IL10) (PubMed:10581077). Can also act as a transcription coactivator: in response to hypoxia, translocates into the nucleus via its interaction with phosphorylated STAT3 and promotes transcription of GSDMC, leading to pyroptosis (PubMed:32929201).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Early endosome membrane; Single-pass type I membrane protein. Recycling endosome membrane; Single-pass type I membrane protein. Nucleus. Note=Associates

	with CMTM6 at recycling endosomes, where it is protected from being targeted for lysosomal degradation (PubMed:28813417). Translocates to the nucleus in response to hypoxia via its interaction with phosphorylated STAT3 (PubMed:32929201). [Isoform 2]: Endomembrane system; Single-pass type I membrane protein
Tissue Location	Highly expressed in the heart, skeletal muscle, placenta and lung. Weakly expressed in the thymus, spleen, kidney and liver. Expressed on activated T- and B-cells, dendritic cells, keratinocytes and monocytes.

Background

PD-L1 Antibody: Cell-mediated immune responses are initiated by T lymphocytes that are themselves stimulated by cognate peptides bound to MHC molecules on antigen-presenting cells (APC) (1). T-cell activation is generally self-limited as activated T cells express receptors such as PD-1 (also known as PDCD-1) that mediate inhibitory signals from the APC (2). PD-1 can bind two different but related ligands, PD-L1 and PD-L2. PD-L1 is a B7-related protein that inhibits cell-mediated immune responses by reducing the secretion of IL-2 and IL-10 from memory T cells (3). This suggests that PD-L1 may be useful in reducing allogenic CD4+ memory T-cell responses to endothelial cells, thereby reducing the likelihood of host immune responses to allografts. PD-L1 also functions as an immune checkpoint protein, and multiple anti-PD-L1 antibodies are currently in phase II and III clinical trials, with one antibody already approved for the treatment of cancer (4).

References

Holling TM, Schooten E, and van Den Elsing PJ. Function and regulation of MHC class II molecules in T-lymphocytes: of mice and men. Hum. Immunol. 2004; 65:282-90.Ishida Y, Agata Y, Shibahara K, et al. Induced expression of PD-1, a novel member of the immunoglobulin gene superfamily, upon programmed cell death. EMBO J. 1992; 11:3887-95.LaGier J and Pober JS. Immune accessory functions of human endothelial cells are modulated by overexpression of B7-H1 (PDL1). Hum. Immunol. 2006; 67:568-78.Aydin AM, Woldu SL, Hutchinson RC, et al. Spotlight on atezolizumab and its potential in the treatment of advanced urothelial bladder cancer.Onco. Targets Ther. 2017;10:1487-502.

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