

IVMB0483

Product Information

Product SKU: IVMB0483	Clone: MK-3475	Target: PD-1
Size: 500 µg		Isotype: Human IgG4k

Additional Information

Reactivity: Human	Host Species: Human
Antibody Type: Biosimilar Recombinant Human Monoclonal Antibody	Expression Host: HEK-293 Cells

Immunogen Information

Background: PD-1 is a transmembrane protein in the CD28/CTLA-4 subfamily of the Ig superfamily^{1, 2}. When stimulated via the T cell receptor (TCR), Tregs translocate PD-1 to the cell surface³. Programmed cell death 1 ligand 1 (PD-L1; CD274; B7H1) and programmed cell death 1 ligand 2 (PD-L2; CD273; B7DC) have been identified as PD-1 ligands¹. PD-1 is co-expressed with PD-L1 on tumor cells and tumor-infiltrating antigen-presenting cells (APCs)². Additionally, PD-1 is co-expressed with IL2RA on activated CD4+ T cells³.

PD-1 is an immune checkpoint receptor that suppresses cancer-specific immune responses⁴. Additionally, PD-1 acts as a T cell inhibitory receptor and plays a critical role in peripheral tolerance induction and autoimmune disease prevention as well as important roles in the survival of dendritic cells, macrophage phagocytosis, and tumor cell glycolysis². PD-1 prevents uncontrolled T cell activity, leading to attenuation of T cell proliferation, cytokine production, and cytolytic activities. Additionally, the PD-1 pathway is a major mechanism of tumor immune evasion, and, as such, PD-1 is a target of cancer immunotherapy².

Pembrolizumab was generated as a humanized monoclonal antibody by grafting the variable region sequences of a mouse anti-human PD-1 antibody onto a human IgG4-k isotype framework containing a stabilizing S228P Fc mutation^{5, 6}. Pembrolizumab shows high affinity for the PD-1 receptor and prevents PD-1 binding to ligands PD-L1 and PD-L2.

Additionally, pembrolizumab strongly inhibits PD-L1 and PD-L2 and has robust activity in a functional ex vivo T cell modulation assay using human donor blood cells.

Pembrolizumab is used in adult and pediatric patients to treat unresectable or metastatic solid tumors with certain genetic abnormalities⁷. Binding of pembrolizumab to PD-1 does not engage Fc receptors or activate complement and therefore is devoid of cytotoxic activity⁸.

Endotoxin Level:	< 1.0 EU/mg as determined by the LAL method
Applications:	ELISA
Synonyms:	Anti PD-1, PDCD1, CD279, lambrolizumab
Antigen Distribution:	PD-1 is expressed on activated T cells, B cells, a subset of thymocytes, macrophages, dendritic cells, and some tumor cells and is also retained in the intracellular compartments of regulatory T cells (Tregs).
Immunogen:	Human PD-1
Formulation:	This biosimilar antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.
Specificity:	This non-therapeutic biosimilar antibody uses the same variable region sequence as the therapeutic antibody Pembrolizumab. This product is for research use only. Pembrolizumab (lambrolizumab) activity is directed against human PD-1.
Product Preparation:	Recombinant biosimilar antibodies are manufactured in an animal free facility using only in vitro protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.
Storage & Handling:	Functional grade biosimilar antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at -80°C. Avoid Repeated Freeze Thaw Cycles.