Anti-Human PD-1 (Tislelizumab)

IVMB0543

Product Information

Product SKU:	IVMB0543	**Clone**:	BGB-A317	**Target**:	PD-1
Size:	500 µg			**Isotype**:	Human IgG4κ

Additional Information

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

Immunogen Information

Background:

Programmed cell death 1 (PD-1) is a transmembrane protein in the Ig superfamily[1,2] that acts as an immune checkpoint receptor[3], a T cell inhibitory receptor, plays critical roles in peripheral tolerance induction, autoimmune disease prevention, macrophage phagocytosis, tumor cell glycolysis, and dendritic cell survival[2]. 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 immunotherapy[2]. Programmed cell death 1 ligand 1 (PD-L1; CD274; B7H1) and programmed cell death 1 ligand 2 (PD-L2; CD273; B7DC) are ligands[1].

Tislelizumab was developed by BeiGene as an immunotherapeutic for hematological cancers and advanced solid tumors[4]. Tislelizumab is a humanized mouse monoclonal antibody designed as a synthetic protein fusion of the 317-4B6 heavy chain VH fragment with human γ4 chain clone mut10 effector/constant domain fragment (disulfide with anti-human PD-1) and synthetic clone 317-4B6 light chain VL fragment with human κ chain constant region fragment, dimer[4,5].

Tislelizumab binds to PD-1 with high specificity and affinity using the critical epitopes Gln75, Thr76, Asp77 and Arg86, blocking PD-1 and preventing ligand binding[4]. The epitope is located on the CC′ loop of the front β sheet face of PD-1 and causes stereospecific hindrance

to PD-L1 binding[6]. Unlike other IgG4 anti-PD-1 blocking antibodies, the S228P mutation known to bind to Fc-γ receptor 1 (FcγRI) and induce antibody-dependent cellular phagocytosis of T cells is not present[4] and several mutations in the Fc-hinge region render tislelizumab unable to bind to FcγRs generally[6]. Consequently, tislelizumab has low affinity for FcγRI and baseline antibody-dependent cellular phagocytosis relative to control antibodies[4]. Additionally, FcR-mediated effects such as antibody-dependent cell-mediated cytotoxicity or compliment-dependent cytotoxicity are not observed[4,6].

Endotoxin Level: < 1.0 EU/mg as determined by the LAL method

Applications: ELISA

Synonyms: Anti-PD-1, PDCD1, CD279

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: Tislelizumab activity is directed against human PD-1 (CD274).

Recommended Isotype Controls: Human IgG4

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.