Anti-Human CTLA-4 (Tremelimumab)

IVMB0408

Product Information

Product SKU:	IVMB0408	**Clone**:	CP-675	**Target**:	CTLA-4
Size:	500 µg			**Isotype**:	Human IgG2κ

Additional Information

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

Immunogen Information

Background:

Cytotoxic T lymphocyte-associated antigen-4 (CTLA-4) is an activation induced, type I transmembrane protein of the Ig superfamily that is expressed as a covalent homodimer [1]. CTLA-4 functions as an inhibitory receptor for the costimulatory molecules B7.1 (CD80) and B7.2 (CD86), inhibiting T cell activation and proliferation as well as IL-2 gene transcription by directly inhibiting TCR signal transduction.

Immune checkpoint blockade of CTLA-4 is a well-established treatment for cancer [2]. Since CTLA-4 inhibits T cell activation, blocking CTLA-4 function enhances T cell activation as well as the immune response. Additionally, tremelimumab activity enhances the production of interleukin-2 and interferon-γ in human T cell blasts stimulated with B7-positive Raji cells. Tremelimumab also stimulates upregulation of the Th1/Th2 pathway, activates the Th17 pathway, and reduces expression of genes involved in epithelial-mesenchymal transition, angiogenesis, and cancer stemness. The mechanism of action includes antibody-dependent cell cytotoxicity.

Tremelimumab was generated by recombinant DNA technology using engineered XenoMice [1]. Tremelimumab binds to CTLA-4 and blocks interaction with its ligands B7.1 (CD80) and B7.2 (CD86), thereby activating an enhanced T cell response against tumors [2]. Additionally, tremelimumab inhibits binding of CTLA-4-Ig to immobilized B7.1 and B7.2. In vitro, binding of tremelimumab to CTLA-4 is >500 fold more selective than for human

CD28-Ig, B7.2-Ig and IgG1. Tremelimumab does not initiate a nonspecific cytokine release or bind to Fc receptors [1]. Additionally, tremelimumab activity is mainly mediated by direct activation of T effector cells rather than by affecting T regulatory cells [3].

Tremelimumab has been tested in a variety of therapeutic trials, including for hepatocellular, non-small cell lung, small cell lung, urothelial, biliary tract, thyroid, renal, gastrointestinal, and cervical cancers [2]. Tremelimumab has been approved for use in the treatment of unresectable hepatocellular carcinoma and some metastatic non-small cell lung cancers.

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

Applications: B

Synonyms: Cytotoxic T-lymphocyte associated protein 4

Antigen Distribution: CTLA-4 is expressed by T lymphocytes and monocytes.

Immunogen: Original antibody generated by immunizing mice with cells expressing Human CTLA-4 recombinantly.

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: Tremelimumab activity is directed against human and cynomolgus monkey CTLA-4.

Recommended Isotype Controls: Human IgG2

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.