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Anti-human CD40L Monoclonal Antibody

Catalog No.: YR0374

Basic Information

Molecular Weight
150kDa

Endotoxin
<1EU/mg (<0.001EU/μg)Determined by LAL gel clotting assay

Sterility
0.2 μm filtration

Aggregation
<5% Determined by SECP

Purity
>95% Determined by SDS-PAGE

Reported Applications

ELISA,neutralization,functional assays such as bioanalytical P K and ADA assays,and those assays for studying biological pathways

Background

Toralizumab Biosimilar uses the same protein sequences as the therapeutic antibody toralizumab. Toralizumab is a humanized (from mouse) monoclonal antibody and expressed in CHO binding to human CD40 ligand, as well as an immunosuppressive drug. Its possible indications included treatment of antibody-mediated disorders (immune thrombocytopenic purpura, lupus nephritis, rheumatoid arthritis), T-cell-mediated diseases (multiple sclerosis, Crohn's disease, and transplantations such as solid organ transplantation, pancreatic islet cell transplantation, and corneal transplantation), and B-cell malignancies such as CLL/small lymphocytic lymphoma, follicular cell lymphoma grade I or II, marginal zone lymphoma, mantle cell lymphoma, MALT lymphoma, Waldenstrom's macroglobulinemia, monocytoid B-cell lymphoma; relapsed/refractory Hodgkin's disease). Systemic lupus erythematosus (SLE) is a multisystem and complex autoimmune disease that results in morbidity, an increased mortality rate and a poor quality of life. At the same time, modern allotransplantation requires the daily administration of nonspecific immunosuppressive agents to prevent T cell-mediated acute rejection. The CD40 ligand (CD40L, also known as CD154) has been shown to be an important modulator of immunoinflammatory events in autoimmune disease and acute allograft rejection. The CD40 ligand (CD40L, also known as CD154) has been shown to be an important modulator of immunoinflammatory events in autoimmune disease and acute allograft rejection. CD40 is expressed constitutively on antigen presenting cells (APCs), including B cells, while CD40L is a member of the tumor necrosis factor family of transmembrane glycoproteins and is expressed on activated CD4þ T cells. The CD40-CD40L interaction is essential for normal T cell–B-cell interactions, including T-cell priming, immunoglobulin (Ig) class-switching, and the T cell-dependent humoral immune response. Indeed, the CD40-CD40L molecules form a co-stimulatory pair, providing the second signal required for T-cell activation of APCs. CD154 binds to CD40 and leads to APC secretion of IL-1β, TNF-α, and IL-12, and to endothelial cell secretion of monocyte chemotactic factors. It also increases APC and endothelial cell expression of MHC class II molecules, of adhesion molecules, and of the co-stimulatory ligands CD80 and CD86. Although blockade of the CD154-CD40 pathway does little to prevent the proliferative response of CD4+ T cells in vitro, it substantially curtails the maturation of cytotoxic CD8+ T cells by interfering with required T-cell-APC interactions. The monoclonal antibody, toralizumab, blocks CD40L binding to CD40 and inhibits T-cell-dependent B-cell proliferation and differentiation. As the Fab' fragment of toralizumab shows activity similar to the intact IgG molecule, it is believed that CD40-CD40L blockade is the principal behind the therapeutic activity seen in this antibody. The effects of anti-CD154 mAb on activated T cells, endothelial cells, and APCs are believed to mediate the allograft-promoting effect. Toralizumab has been studied in clinical trials, but it also has been limited by thrombotic complications seen in early human trials, similar to ruplizumab.

Contact

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Immunogen Information

Clone
Toralizumab Biosimilar

Isotype
Human IgG1 kappa

Immunogen
Human CD40L

RecommendedIsotype Control(s)
In Vivo Grade Recombinant Human IgG1 Kappa Isotype Control Antibody

Recommended Dilution Buffer
1×PBS pH 7.4

Product Information

Production
Purified from cell culture supernatant in an animal-free facility

Purification
Protein A/G

Storage
Store at -20℃