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Anti-Human CCR4 (Mogamulizumab Biosimilar)

Catalog Number:	503801, 503802, 503803
Size:	1 mg, 5 mg, 20 mg
Target Name:	CCR4, CD194, CD-194, CKR4, K5-5, ChemR13, CMKBR4
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Mogamulizumab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Mogamulizumab Biosimilar, CCR4 Monoclonal Antibody
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human CCR4
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	CD194
RRID:	AB_3739314
Antibody Type:	Recombinant
Reactivity:	Human
GeneID:	1233

BACKGROUND INFORMATION

Mogamulizumab is a humanized monoclonal antibody belonging to the immunoglobulin G1 kappa (IgG1κ) subclass, engineered to specifically recognize and bind to the CC chemokine receptor 4 (CCR4). Structurally, Mogamulizumab is a glycoprotein with a molecular mass of approximately 149 kilodaltons (kDa). It consists of two identical heavy chains and two identical light chains joined by disulfide bonds, forming the typical Y-shaped antibody structure. Produced in mammalian expression systems such as Chinese Hamster Ovary (CHO) cells, it undergoes controlled post-translational modifications to ensure proper folding, stability, and glycosylation patterns essential for its biological function.

The variable regions of Mogamulizumab (the antigen-binding (Fab) fragments) contain complementarity-determining regions (CDRs) responsible for high-affinity recognition of CCR4, which is a seven-transmembrane G protein–coupled receptor expressed on specific subsets of immune cells. These CDRs were derived from murine antibody sequences and grafted onto a human IgG1 framework to preserve target specificity while minimizing nonhuman structural elements. Mogamulizumab is uniquely designed with a defucosylated Fc (fragment crystallizable) region, created through glycoengineering to remove fucose residues from the Fc-linked N-glycan at asparagine 297. This modification significantly enhances the antibody's binding affinity to Fc gamma receptor IIIa (FcγRIIIa) on effector cells such as natural killer (NK) cells, thereby amplifying antibody-dependent cellular cytotoxicity (ADCC) in in vitro systems.

Functionally, upon binding to CCR4 on target cells, Mogamulizumab can trigger immune effector mechanisms such as ADCC and complement-dependent cytotoxicity (CDC), leading to targeted cell elimination in experimental models. Beyond its cytotoxic potential, CCR4 binding may alter receptor-mediated signaling and downstream chemotactic responses. The Fc–FcRn (neonatal Fc receptor) interaction provides extended serum half-life and molecular stability through recycling.

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