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Anti-Human CD38 (Daratumumab Biosimilar)

Catalog Number:	501801, 501802, 501803
Size:	1 mg, 5 mg, 20 mg
Target Name:	CD38, gp45, Cyclic ADP-ribose hydrolase 1,T10, ADP-ribosyl cyclase
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Daratumumab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Anti-Human CD38 (Daratumumab Biosimilar)
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human CD38
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Antibody Type:	Recombinant
Reactivity:	Human

BACKGROUND INFORMATION

Daratumumab is a fully human monoclonal antibody belonging to the immunoglobulin G1 kappa (IgG1κ) subclass. It was developed using recombinant DNA technology and produced in mammalian expression systems such as Chinese Hamster Ovary (CHO) cells to maintain human-like post-translational modifications including glycosylation and disulfide linkage formation. The molecule has a molecular weight of approximately 148 kilodaltons (kDa) and consists of two identical heavy chains and two identical light chains connected by disulfide bonds, forming the canonical Y-shaped IgG antibody structure. Each heavy chain contains one variable (VH) and three constant (CH1–CH3) domains, while each light chain contains one variable (VL) and one constant (CL) domain.

The antigen-binding sites of Daratumumab are located within the complementarity-determining regions (CDRs) of the VH and VL domains, which confer specificity toward CD38, a transmembrane glycoprotein expressed at varying densities on many cell types. The binding interface between Daratumumab and CD38 is characterized by high-affinity interactions involving hydrogen bonding, hydrophobic forces, and electrostatic complementarity. Structural studies have shown that Daratumumab binds to a conformational

epitope on CD38 composed of both protein and carbohydrate residues, highlighting its precise steric complementarity with the target antigen. This interaction enables the antibody to influence CD38's enzymatic and receptor-mediated functions in experimental models, such as those modulating calcium signaling and cellular adhesion.

The Fc (fragment crystallizable) region of Daratumumab, typical of IgG1 molecules, promotes molecular stability and mediates effector interactions by engaging Fc gamma receptors (FcγRs) on immune cells and the complement protein C1q. These engagements can initiate immune mechanisms such as complement-dependent cytotoxicity (CDC) and antibody-dependent cellular cytotoxicity (ADCC) under laboratory conditions. Additionally, the Fc region interacts with neonatal Fc receptors (FcRn), extending the antibody's circulatory half-life through recycling.

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