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Anti-Human CD22 (Epratuzumab Biosimilar)

Catalog Number:	502601, 502602, 502603
Size:	1 mg, 5 mg, 20 mg
Target Name:	CD22, BL-CAM, Siglec-2
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Epratuzumab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Epratuzumab Biosimilar, CD22 Monoclonal Antibody
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human CD22
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	Siglec-2
RRID:	AB_3739302
Antibody Type:	Recombinant
Reactivity:	Human

BACKGROUND INFORMATION

Epratuzumab is a humanized monoclonal antibody that belongs to the immunoglobulin G1 kappa (IgG1κ) subclass and is engineered to target CD22, a transmembrane glycoprotein expressed primarily on B lymphocytes. Structurally, Epratuzumab is a recombinant glycoprotein with a molecular mass of approximately 145 to 150 kilodaltons (kDa). The molecule is composed of two identical heavy chains and two identical light chains connected by interchain disulfide bonds, forming the characteristic Y-shaped antibody configuration typical of IgG immunoglobulins. Each heavy chain contains one variable (VH) domain and three constant regions (CH1-CH3), and each light chain comprises one variable (VL) and one constant (CL) domain. The antibody is produced in mammalian expression systems, such as Chinese Hamster Ovary (CHO) cells, ensuring proper glycosylation and folding necessary for biological stability and activity.

The antigen-binding regions of Epratuzumab, located within the complementarity-determining regions (CDRs) of the VH and VL domains, are derived from murine antibody sequences engineered into a human IgG framework to achieve specific recognition of CD22. This epitope binding occurs with high affinity through non-covalent interactions, including hydrogen bonding and van der Waals forces. CD22, a member of the sialic acid-binding immunoglobulin-like lectin (Siglec) family, functions as an inhibitory coreceptor that modulates B-cell receptor (BCR) signaling. Upon binding to CD22, Epratuzumab influences intracellular signaling dynamics by promoting receptor internalization and partial modulation of downstream pathways involving calcium mobilization and phosphatase recruitment, such as SHP-1 activation in experimental systems.

The Fc (fragment crystallizable) region of Epratuzumab contributes to its stability and pharmacokinetic properties through interactions with neonatal Fc receptors (FcRn), which extend circulating half-life. As an IgG1 molecule, it can also interact with Fc gamma receptors (FcγRs), enabling potential effector functions like limited antibody-dependent cellular cytotoxicity (ADCC) under defined experimental conditions. Overall, Epratuzumab exemplifies a rationally engineered humanized antibody structure optimized for selective targeting of B-cell surface receptors and modulation of immune-signaling pathways in molecular and cellular studies.

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