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Anti-Human HER2 (Trastuzumab Biosimilar)

Catalog Number:	506101, 506102, 506103, 506104, 506105
Size:	1 mg, 5 mg, 20 mg, 5 mg, 20 mg
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Trastuzumab
Application:	Flow cytometry, animal model study
Format:	Liquid
Product Description:	Trastuzumab Biosimilar, HER2 Monoclonal Antibody
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	A431 cells overexpressing human EGFR
Clone Number:	4D5-8
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Min Sample Size:	1 mg
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	CD340

BACKGROUND INFORMATION

Trastuzumab is a recombinant humanized monoclonal antibody belonging to the immunoglobulin G1 (IgG1) subclass, engineered to specifically recognize the human epidermal growth factor receptor 2 (HER2, also known as ErbB2). Structurally, the molecule has a molecular weight of approximately 148 kilodaltons (kDa) and retains the typical Y-shaped configuration of IgG antibodies, consisting of two identical heavy chains and two identical light chains connected by disulfide bonds. Each heavy chain contains one variable (VH) domain and three constant (CH1-CH3) domains, while each light chain comprises one variable (VL) and one constant (CL) domain. Trastuzumab is produced in mammalian expression systems, such as Chinese Hamster Ovary (CHO) cells, ensuring proper glycosylation and structural fidelity.

The antigen-binding sites of Trastuzumab, located within the complementarity-determining regions (CDRs) of its VH and VL domains, exhibit high specificity for an extracellular epitope on subdomain IV of the HER2 receptor. The binding interaction is stabilized by a network of hydrogen bonds and hydrophobic contacts, characterized by sub-nanomolar affinity. This precise molecular recognition prevents receptor interactions that influence downstream signaling, thus modulating various intracellular

signaling cascades involved in cell proliferation and survival within experimental systems that model receptor-mediated signaling pathways.

The Fc (fragment crystallizable) region of Trastuzumab confers multiple structural and functional properties. It mediates dimerization through disulfide bonds, enhances stability in physiological environments, and contributes to prolonged serum persistence by binding to neonatal Fc receptors (FcRn), which facilitate recycling and protect the antibody from degradation. The Fc region also allows interaction with Fc gamma receptors (FcγRs), which can influence immune effector responses under certain conditions.