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InnoCyto Inc.

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Anti-Human EGFR (Matuzumab Biosimilar)

Catalog Number:	503601, 503602, 503603
Size:	1 mg, 5 mg, 20 mg
Target Name:	EGFR, Proto-oncogene c-ErbB-1, Receptor tyrosine-protein kinase erbB-1, HER1
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Matuzumab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Matuzumab Biosimilar, EGFR Monoclonal Antibody
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human EGFR
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	ErbB1, HER1
RRID:	AB_3739312
Antibody Type:	Recombinant
Reactivity:	Human

BACKGROUND INFORMATION

Matuzumab is a humanized monoclonal antibody belonging to the immunoglobulin G1 (IgG1) subclass and is specifically engineered to target the human epidermal growth factor receptor (EGFR), also known as ErbB1 or HER1. Structurally, Matuzumab is a glycoprotein with a molecular weight of approximately 150 kilodaltons (kDa), composed of two identical heavy chains and two identical light chains connected by interchain disulfide bonds, forming the classical Y-shaped structure characteristic of IgG antibodies. Each heavy chain contains one variable (VH) domain and three constant (CH1-CH3) domains, while each light chain contains one variable (VL) and one constant (CL) domain. The antibody is produced in mammalian expression systems such as Chinese Hamster Ovary (CHO) cells to ensure accurate folding and glycosylation.

The variable regions of Matuzumab, particularly the complementarity-determining regions (CDRs), are derived from murine antibodies and confer high specificity and affinity for the extracellular domain III of EGFR. This epitope corresponds to a key region responsible for ligand binding to signaling molecules such as epidermal growth factor (EGF) and transforming growth factor-alpha (TGF-α). By binding to this site, Matuzumab sterically hinders ligand attachment and subsequent receptor dimerization, thereby blocking activation of the receptor's intracellular tyrosine kinase domain. This inhibition prevents autophosphorylation of key tyrosine residues and halts downstream signaling through pathways including RAS-RAF-MEK-ERK and PI3K-AKT, which regulate cell proliferation, differentiation, and survival in experimental cell models.

The Fc (fragment crystallizable) domain of the IgG1 subclass contributes to Matuzumab's structural stability and prolongs its half-life through neonatal Fc receptor (FcRn)–mediated recycling. It also allows limited engagement with Fc gamma receptors (FcγRs), enabling potential immune effector mechanisms such as antibody-dependent cellular cytotoxicity (ADCC) in vitro.

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