www.innocyto.com

InnoCyto Inc.

15375 Barranca Pkwy, Suite I-103
Irvine, CA 92618
Email: info@innocyto.com
Phone: 1-949-418-7543

Anti-Human HER2 (Pertuzumab Biosimilar)

Catalog Number:	504801, 504802, 504803
Size:	1 mg, 5 mg, 20 mg
Target Name:	HER2, HER-2, ERBB2, CD340, neu, MLN19, NEU, NGL, TKR1
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Pertuzumab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Anti-Human HER2 (Pertuzumab Biosimilar)
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human ErbB-2 / Her2
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	ErbB2
Antibody Type:	Recombinant
Reactivity:	Human

BACKGROUND INFORMATION

Pertuzumab is a recombinant humanized monoclonal antibody of the immunoglobulin G1 kappa (IgG1κ) subclass, engineered to specifically target the extracellular domain II (also known as the dimerization domain) of the human epidermal growth factor receptor 2 (HER2, or ErbB2). Structurally, Pertuzumab is a glycoprotein with a molecular mass of approximately 148 kilodaltons (kDa). The molecule is composed of two identical heavy chains and two identical light chains, linked by interchain disulfide bonds to form the characteristic Y-shaped structure typical of IgG antibodies. It is produced in mammalian cell expression systems such as Chinese Hamster Ovary (CHO) cells, which enable proper folding, glycosylation, and molecular stability.

The variable regions of Pertuzumab’s heavy (VH) and light (VL) chains contain complementarity-determining regions (CDRs) that determine the antibody’s high specificity and affinity for the domain II region of HER2. This domain is critical for receptor dimerization with other members of the ErbB family, such as HER3 and EGFR (HER1). By binding to this domain, Pertuzumab

sterically hinders the heterodimerization process that normally activates HER2-mediated intracellular signaling pathways. These pathways include the RAS-RAF-MEK-ERK and PI3K-AKT cascades, which regulate gene expression, cellular growth, and survival in experimental systems. In doing so, Pertuzumab acts at the molecular level to disrupt ligand-dependent receptor crosstalk and downstream phosphorylation cascades.

The Fc (fragment crystallizable) region of Pertuzumab, derived from human IgG1, contributes to structural integrity, pharmacokinetic stability, and interaction with the neonatal Fc receptor (FcRn), allowing antibody recycling and prolonged circulatory half-life. Additionally, the Fc region can engage Fc gamma receptors (FcγRs), enabling effector mechanisms such as antibody-dependent cellular cytotoxicity (ADCC) in vitro.

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