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Anti-Human RSV (Palivizumab Biosimilar)

Catalog Number:	504501, 504502, 504503, 504504, 504505
Size:	1 mg, 5 mg, 20 mg, 5 mg, 20 mg
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Palivizumab
Application:	Flow cytometry, animal model study
Format:	Liquid
Product Description:	Palivizumab Biosimilar, Endotoxin 0.05 EU/mg
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Respiratory Syncytial Virus F protein
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	F protein

BACKGROUND INFORMATION

Palivizumab is a humanized monoclonal antibody belonging to the immunoglobulin G1 kappa (IgG1κ) subclass, developed to specifically target the fusion (F) glycoprotein of the respiratory syncytial virus (RSV). Structurally, Palivizumab is a glycoprotein with a molecular weight of approximately 148 kilodaltons (kDa). It is composed of two identical heavy chains and two identical light chains linked by disulfide bonds, forming the canonical Y-shaped IgG structure. The antibody is produced in mammalian expression systems, such as Chinese Hamster Ovary (CHO) cells, which ensure proper glycosylation, folding, and assembly consistent with human immunoglobulins.

The variable domains of Palivizumab’s heavy (VH) and light (VL) chains contain complementarity-determining regions (CDRs) responsible for antigen specificity. These CDRs were derived from murine antibody sequences through humanization to minimize non-human components while retaining high-affinity binding. The antibody recognizes a conserved epitope within the A antigenic site of the RSV F protein, a structurally important domain responsible for mediating viral fusion with host cell membranes. By binding to this epitope on the prefusion and postfusion forms of the F protein, Palivizumab sterically impedes conformational rearrangements required for membrane fusion, thereby preventing viral entry and subsequent cell-to-cell spread in model systems.

The Fc (fragment crystallizable) domain of Palivizumab, derived from the human IgG1 isotype, confers structural stability and extends circulatory half-life by engaging the neonatal Fc receptor (FcRn), which recycles the antibody and protects it from

lysosomal degradation. While the Fc region is capable of interacting with Fc gamma receptors (FcγRs) and complement component C1q, Palivizumab's primary function is neutralization rather than immune effector activation. Overall, Palivizumab exemplifies precise monoclonal antibody engineering that combines high-affinity viral protein recognition with a stable human IgG1 scaffold, serving as a model for studying viral fusion inhibition and protein–antibody interactions in molecular virology research.