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Anti-Human IL-17A (Secukinumab Biosimilar)

Catalog Number:	505601, 505602, 505603
Size:	1 mg, 5 mg, 20 mg
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Secukinumab
Application:	Neutralization, Intracellular Flow cytometry, animal model study
Format:	Liquid
Product Description:	Secukinumab Biosimilar, Human IL17A Monoclonal Antibody
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human IL17A
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months

BACKGROUND INFORMATION

Secukinumab is a fully human monoclonal antibody belonging to the immunoglobulin G1 kappa (IgG1κ) subclass, developed to selectively target and neutralize interleukin-17A (IL-17A), a proinflammatory cytokine involved in the regulation of immune responses. Structurally, Secukinumab is a glycoprotein with a molecular weight of approximately 151 kilodaltons (kDa). The molecule consists of two identical heavy chains and two identical light chains linked by interchain disulfide bonds, forming the characteristic Y-shaped immunoglobulin architecture. Each heavy chain comprises a variable (VH) domain and three constant (CH1-CH3) domains, while each light chain contains a variable (VL) and a constant (CL) domain. The antibody is produced using recombinant DNA technology in mammalian cell systems, typically Chinese Hamster Ovary (CHO) cells, to preserve correct folding, glycosylation, and biological activity.

The antigen-binding (Fab) regions of Secukinumab contain complementarity-determining regions (CDRs) that define its high-affinity recognition sites for IL-17A. These CDRs interact non-covalently with specific epitopes on the IL-17A homodimer or IL-17A/IL-17F heterodimer, forming a stable immune complex that prevents IL-17A from binding to its receptor (IL-17RA/IL-17RC) on target cells. By sequestering IL-17A, Secukinumab impedes receptor-mediated signaling cascades such as NF-κB and MAPK pathways, which in turn modulate the expression of cytokines, chemokines, and antimicrobial peptides in experimental systems investigating immune pathway regulation.

The Fc (fragment crystallizable) region of Secukinumab, characteristic of IgG1 molecules, provides structural stability and

contributes to its long serum half-life through recycling by neonatal Fc receptors (FcRn). This region, however, displays limited effector activity since Secukinumab's primary mode of action involves cytokine neutralization rather than immune cell recruitment.