www.innocyto.com.cn

InnoCyto Inc.

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

Anti-Human PD-L1 (Avelumab Biosimilar)

Catalog Number:	500701, 500702, 500703
Size:	1 mg, 5 mg, 20 mg
Target Name:	PD-L1, PDL1 CD274, B7-H1
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Avelumab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Anti-Human PD-L1 (Avelumab Biosimilar)
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human PD-L1
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
Synonyms:	CD274, B7-H1
RRID:	AB_3739283
Antibody Type:	Recombinant
Reactivity:	Human

BACKGROUND INFORMATION

Avelumab is a fully human monoclonal antibody classified as an immunoglobulin G1 lambda (IgG1λ) isotype. It is produced through recombinant DNA technology using mammalian expression systems, typically Chinese Hamster Ovary (CHO) cells, which ensure proper post-translational folding, glycosylation, and disulfide bond formation. The molecule has an approximate molecular weight of 147 kilodaltons (kDa) and displays the standard Y-shaped antibody structure composed of two identical heavy chains and two identical light chains joined by disulfide linkages. Each heavy chain contains one variable and three constant domains, while each light chain comprises one variable and one constant domain. Together, these domains form two antigen-binding fragments (Fab) and a single crystallizable fragment (Fc) responsible for effector interactions.

Structurally, Avelumab's antigen-binding regions, specifically its complementarity-determining regions (CDRs) located within the variable domains, confer high specificity toward programmed death-ligand 1 (PD-L1). By binding to PD-L1, the antibody prevents its interaction with programmed death-1 (PD-1) and B7.1 (CD80) receptors on T cells and antigen-presenting cells. This blockade interrupts inhibitory immune signaling and restores the potential for immune cell activation in experimental systems investigating immune checkpoint regulation. Avelumab binds PD-L1 through a high-affinity interaction characterized by extensive hydrogen bonding and shape complementarity, typically reflected by equilibrium dissociation constants in the low-nanomolar range.

Unlike certain other antibodies targeting the same pathway, Avelumab retains an unmodified Fc region, allowing it to mediate immune effector functions such as antibody-dependent cellular cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC) under suitable assay conditions. The Fc portion also interacts with neonatal Fc receptors (FcRn) to promote recycling and extend the antibody's half-life in circulation. Overall, Avelumab exemplifies a rationally engineered IgG1 monoclonal antibody, with a structural design optimized for precise antigen recognition, functional stability, and the capacity to engage immune effector mechanisms during molecular and cellular investigations.

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