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InnoCyto Inc.

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Anti-Human CD38 (Isatuximab Biosimilar)

Catalog Number:	503501, 503502, 503503
Size:	1 mg, 5 mg, 20 mg
Target Name:	CD38, gp45, Cyclic ADP-ribose hydrolase 1,T10, ADP-ribosyl cyclase
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Isatuximab
Application:	Flow cytometry, animal model study
Reactivity:	Human
Format:	Liquid
Product Description:	Isatuximab Biosimilar, CD38 Monoclonal Antibody
Isotype:	Human IgG1
Clonality:	Recombinant
Immunogen:	Human CD38
Species specificity:	Human
Purity:	>95% by reducing SDS-PAGE
Grade:	In vivo
Min Sample Size:	1 mg
Storage Conditions:	4ºC
Maximal Shelf Life:	12 months
RRID:	AB_3739311
Antibody Type:	Recombinant
Reactivity:	Human

BACKGROUND INFORMATION

Isatuximab is a chimeric monoclonal antibody of the immunoglobulin G1 kappa (IgG1κ) subclass designed to specifically target CD38, a multifunctional transmembrane glycoprotein expressed on various immune and hematopoietic cell types. Structurally, Isatuximab is a glycoprotein with a molecular weight of approximately 150 kilodaltons (kDa). It is composed of two identical heavy chains and two identical light chains joined by interchain disulfide bonds, forming the canonical Y-shaped structure characteristic of IgG antibodies. Each heavy chain contains a variable (VH) domain and three constant domains (CH1-CH3), and each light chain contains a variable (VL) and a constant (CL) domain. The molecule is produced using mammalian expression systems, such as Chinese Hamster Ovary (CHO) cells, which ensure proper folding, assembly, and glycosylation consistent with human immunoglobulins.

The antigen-binding sites of Isatuximab are formed by complementarity-determining regions (CDRs) within the VH and VL domains. These CDRs determine the antibody's epitope specificity for CD38, binding with high affinity through a network of hydrogen bonds and hydrophobic interactions. The recognized epitope on CD38 lies within its extracellular catalytic domain, which functions as an ectoenzyme involved in the metabolism of nicotinamide adenine dinucleotide (NAD^+) and cyclic ADP-ribose. By binding to CD38, Isatuximab interferes with its enzymatic activity and can induce receptor clustering that modulates signaling pathways, influencing calcium flux and cell activation in immunological models. Furthermore, engagement of CD38 may promote direct cell death mechanisms through apoptotic or lysosomal pathways under defined experimental conditions.

The Fc (fragment crystallizable) region of Isatuximab, derived from the IgG1 isotype, contributes to molecular stability and prolongs serum half-life via neonatal Fc receptor (FcRn) recycling. It can also engage Fc gamma receptors (FcγRs) and complement component C1q, mediating antibody-dependent cellular cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC) in vitro.

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