Anti-hCD20-hIgG4 (S228P)

Engineered monoclonal human IgG4 antibody against human CD20

Catalog code: hcd20-mab14, hcd20-mab14-03

https://www.invivogen.com/anti-human-cd20-igg4s228p-rituximab

For research use only, not for diagnostic or therapeutic use

Version 23L21-MM

PRODUCT INFORMATION

Contents: Anti-hCD20-hIgG4 (S228P) purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two quantities:

hcd20-mab14: 100 µg Anti-hCD20-hIgG4 (S228P)

hcd20-mab14-03: 3 x 100 µg Anti-hCD20-hIgG4 (S228P)

Target: Human CD20

Clonality: Monoclonal antibody

Isotype: Human IgG4 (S228P), kappa

Source: CHO cells

Formulation: 0.2 µm filtered solution in sodium phosphate buffer with glycine, saccharose, and stabilizing agents

Purity: Purified by affinity chromatography with protein G

Storage and stability

- Product is shipped at room temperature. Upon receipt, store at -20°C.
- Reconstituted antibody is stable for 1 month when stored at 4°C and for 1 year when aliquoted and stored at -20°C. Avoid repeated freeze-thaw cycles.

Quality control

- Binding to human CD20 has been tested using flow cytometry.
- The complete sequence of this antibody has been verified.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

Anti-hCD20-hIgG4 (S228P) features the variable region of rituximab and a mutated constant region of the human IgG4 isotype reported to reduce Fab-arm exchange[1]. Rituximab is a mouse/human chimeric monoclonal antibody that targets the CD20 antigen found on the surface of malignant and normal B lymphocytes. Binding of rituximab to CD20 results in cell destruction through different mechanisms including direct signaling of apoptosis, complement activation and cell-mediated cytotoxicity. Rituximab has been approved by the FDA for the treatment of various lymphoid malignancies, including B-cell non-Hodgkin's lymphoma and B-cell chronic lymphocytic leukemia.

Anti-hCD20-hIgG4 (S228P) is an engineered human IgG4 isotype. IgG4 antibodies display low antibody-dependent cytotoxicity (CDC). IgG4s are dynamic molecules that exchange Fab arms by swapping a heavy chain and attached light chain (half molecule) with a heavy-light chain pair from another molecule, resulting in bispecific antibodies[1, 2]. IgG4 molecules thereby lose their ability to cross-link antigen and to form immune complexes under most conditions[2]. Thus, mutations that prevent Fab-arm exchange in vivo should be considered when designing therapeutic IgG4. The constant region of Anti-hCD20-hIgG4 (S228P) contains the S228P mutation which reduces Fab-arm exchange by stabilizing the disulfides in the core-hinge of the IgG4 moleucles[1]. Anti-hCD20-hIgG4 (S228P) was generated by recombinant DNA technology. It has been produced in CHO cells and purified by affinity chromatography with protein G.

1. **Labrijn AF. *et al.*, 2009.** Therapeutic IgG4 antibodies engage in Fab-arm exchange with endogenous human IgG4 in vivo. Nat Biotechnol. 27(8):767-71.
2. **van der Neut Kolfschoten M. *et al.*, 2007.** Anti-inflammatory activity of human IgG4 antibodies by dynamic Fab arm exchange. Science. 317(5844):1554-7.

APPLICATIONS

Anti-hCD20-hIgG4 (S228P) targets the human CD20 antigen found on the surface of malignant and normal B lymphocytes.

ANTIBODY ISOTYPE COLLECTION

For your research, InvivoGen provides an anti-hCD20 isotype collection. This collection consists of monoclonal antibodies comprising the variable region of rituximab, and the constant region of human (h) and mouse (m) isotypes; hIgG1, hIgG1fut, hIgG1NQ, hIgG2, hIgG3, hIgG4, hIgG4(S228P), hIgA2, mIgG1, and mIgG2a. The isotypes differ in their functional locations and effector functions, such as complement-dependent cytotoxicity (CDC) and antibody-dependent cell-mediated cytotoxicity (ADCC), as presented in the table below.

Effector functions	Human isotypes							Mouse isotypes	
	IgG1	IgG1 fut	IgG1 NQ	IgG2	IgG3	IgG4 and IgG4 (S228P)	IgA2	IgG1	IgG2a
ADCC	++	++++	-	+/-	++	+/-	+	+/-	++
ADCP	+++	+++	-	+/-	++	+	+	+	+++
CDC	++	++	+/-	+	+++	-	-	-	++

METHODS

Antibody resuspension (100 µg/ml)

Note: Ensure you see the lyophilized pellet before resuspension.

• Add 1 ml of sterile water to 100 µg and gently pipette until completely resuspended.

RELATED PRODUCTS

Product	Catalog Code
Anti-β-Gal-hIgG4 (S228P)	bgal-mab114
Anti-hCD20-hIgG1	hcd20-mab1
Anti-hCD20-hIgG1fut	hcd20-mab13
Anti-hCD20-hIgG1NQ	hcd20-mab12
Anti-hCD20-hIgG2	hcd20-mab2
Anti-hCD20-hIgG3	hcd20-mab3
Anti-hCD20-hIgG4	hcd20-mab4

Other antibody isotype families are available, such as Anti-hTNF-α, Anti-hPD1 and Anti-βGal (control). For more information, please visit www.invivogen.com/biosimilar-antibody-isotypes.

TECHNICAL SUPPORT
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