

Anti-hCD70-hIgG1NQ

Non-glycosylated, recombinant human monoclonal IgG1 antibody against human CD70

Catalog code: hcd70-mab12, hcd70-mab12-03

<https://www.invivogen.com/anti-human-cd70-vorsetuzumab-isotype-mabs>

For research use only

Version 23L20-MM

PRODUCT INFORMATION

Contents: Anti-hCD70-hIgG1NQ purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two quantities:

hcd70-mab12: 100 µg Anti-hCD70-hIgG1NQ

hcd70-mab12-03: 3 x 100 µg Anti-hCD70-hIgG1NQ

Target: Human cluster of differentiation 70 (hCD70)

Variable region biosimilar: Vorsetuzumab

Source: Chinese hamster ovary (CHO) cells

Isotype: Human IgG1, kappa

Purification: By affinity chromatography with protein G

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

Tested application: ELISA, flow cytometry

Antibody resuspension (0.1 mg/ml)

Note: Ensure you see the lyophilized pellet before resuspension.

Resuspend Anti-hCD70-hIgG1NQ with sterile water:

Add 1 ml of sterile water per 100 µg vial.

Storage and stability

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

Quality control

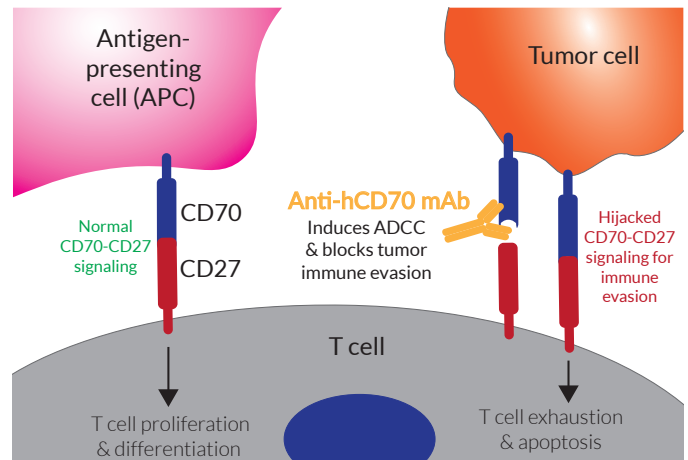
- Binding of Anti-hCD70-hIgG1NQ to human CD70 has been validated using flow cytometry and ELISA.
- The complete sequence of the antibody has been verified.
- Absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and TLR4 cellular assays.

PRODUCT DESCRIPTION

Anti-hCD70-hIgG1NQ is a recombinant monoclonal antibody (mAb) featuring the variable region of vorsetuzumab which targets the human (h)CD70, and a non-glycosylated constant region of the hIgG1 isotype. Anti-hCD70-hIgG1 was generated by recombinant DNA technology, produced in CHO cells (deficient for fucosylation), and purified by affinity chromatography with protein G.

IgG1fNQ Isotype effector function

Anti-hCD70-hIgG1NQ contains a N-glycosylation mutation in the constant region of human IgG1. Thus, potential asparagine (N) glycosylation sites are substituted by glutamine (Q) residues, resulting in the production of a non-glycosylated antibody. Glycosylation of an antibody has no effect on antigen binding but is essential for Fc receptor-mediated activity. Therefore, the effector function of Anti-hCD70-hIgG1NQ is severely compromised (see next page).



BACKGROUND

CD70 (CD27L or TNFSF7) is a member of the TNFR family known as the ligand for CD27. The interaction of CD70 on antigen-presenting cells with CD27 on T cells promotes T cell activation and maturation, in concert with the T cell receptor engagement¹⁻². The CD70-CD27 pair is thus considered as a costimulatory immune-checkpoint². However, CD70 is also transiently expressed on T cells after their activation and is suggested to play a negative feedback function to control inflammatory T cell responses³.

Importantly, CD70 and CD27 are expressed in a range of solid and hematological malignancies. This helps tumor cells hijacking the CD70-CD27 axis to evade the immune surveillance². Vorsetuzumab is a humanized IgG1 anti-CD70 blocking mAb that mediated killing of tumor cells through antibody-dependent cell-mediated cytotoxicity (ADCC) in preclinical studies. Its conjugation to a cytotoxic drug had shown promising results in phase 1 clinical trials and has encouraged the development of anti-CD70 therapy in the context of cancers^{1,4}.

1. Jacobs, J. *et al.*, 2015. CD70: An emerging target in cancer immunotherapy. *Pharmacol Ther* 155, 1-10. 2. Flieswasser, T. *et al.* 2022. The CD70-CD70 axis in oncology: the new kids on the block. *J Exp Clin Cancer Res* 41, 12. 3. O'Neill, R.E. *et al.* 2017. T Cell-Derived CD70 Delivers an Immune Checkpoint Function in Inflammatory T Cell Responses. *J Immunol* 199, 3700-3710. 4. Tannir, NM *et al.*, 2010. Phase I dose-escalation study of SGN-75 in patients with CD70-positive relapsed/refractory non-Hodgkin lymphoma or metastatic renal cell carcinoma. *Invest New Drugs*. 32(6):1246-57.

TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Asia: +852 3622-3480

E-mail: info@invivogen.com

ANTIBODY ISOTYPE COLLECTION

For your research, InvivoGen provides an **Anti-hCD70 isotype family**. This collection consists of mAbs comprising the variable region of anti-human CD70, and differing constant regions of both native and engineered human isotypes. These isotypes differ in their functional and effector functions, such as antibody-dependent cell-mediated cytotoxicity (ADCC), antibody-dependent cellular phagocytosis (ADCP), and complement dependent cytotoxicity (CDC), as presented in the table below. The Anti-hCD70 isotype family will assist you in the study of the various effector functions of the different isotypes, and help you determine which isotype is the most suitable for your application.

Effector functions of both native and engineered IgG1 isotypes

Effector functions	Native	Engineered	
	IgG1	IgG1NQ	IgG1fut
ADCC	++	-	++++
ADCP	+++	-	+++
CDC	++	+/-	++

RELATED PRODUCTS

Product	Catalog Code
Anti-hCD70-hIgG1	hcd70-mab1
Anti-hCD70-hIgG1fut	hcd70-mab13
Anti-hPD1-Pem-hIgG1	hpd1pe-mab1
Anti-hPD1-Ni-hIgG1	hpd1ni-mab1
Anti- β -Gal-hIgG1	bgal-mab1
Anti- β -Gal-hIgG1fut	bgal-mab13
Jurkat-Lucia™ NFAT-CD16 cells	jktl-nfat-cd16
Raji-Null cells	raji-null
QUANTI-Luc™ 4 Lucia/Gaussia	rep-qlc4lg1

For a complete list of clinically relevant biosimilar mAbs provided by InvivoGen, please visit www.invivogen.com/biosimilar-antibody-isotypes.

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E-mail: info@invivogen.com