

# Anti-hVISTA-hIgG1NQ

Non-glycosylated monoclonal human IgG1 antibody against human VISTA

Catalog code: hvista-mab12, hvista-mab12-03

<https://www.invivogen.com/nongylco-anti-hvista-mab>

For research use only, not for diagnostic or therapeutic use

Version 23L15-MM

## PRODUCT INFORMATION

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

**hvista-mab12:** 100 µg Anti-hVISTA-hIgG1NQ

**hvista-mab12-03:** 3 x 100 µg Anti-hVISTA-hIgG1NQ

**Target:** V-domain Ig containing suppressor of T-cell activation (VISTA)

**Species reactivity:** Human

**Source:** CHO cells

**Isotype:** Human IgG1

**Light chain type:** Kappa

**Clonality:** Monoclonal

**Purification:** By affinity chromatography with protein G

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

### Storage

- 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

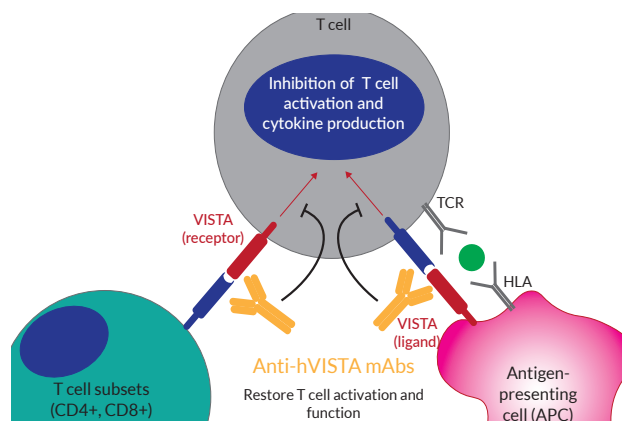
- Binding of Anti-hVISTA-hIgG1NQ to human VISTA on target cells has been confirmed using flow cytometry.
- The complete sequence of the antibody has been verified.
- Absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and TLR4 cellular assays.

## PRODUCT DESCRIPTION

Anti-hVISTA-hIgG1NQ is a recombinant monoclonal antibody (mAb) featuring a variable region that recognizes human VISTA, a member of the B7 family, and a non-glycosylated constant region of the human IgG1 isotype (hIgG1NQ). Anti-hVISTA-hIgG1NQ was generated by recombinant DNA technology, produced in CHO cells, and purified by affinity chromatography with protein G.

### VISTA - the Immune checkpoint

V-domain Ig containing suppressor of T cell activation (VISTA), also known as programmed death-1 homolog (PD-1H), is a member of the CD28/B7 protein superfamily<sup>1</sup>. VISTA is predominantly expressed on antigen-presenting cells (APCs), and directly suppresses T cell activation and proliferation through its interaction with a currently unknown receptor<sup>1,2</sup>. Additionally, VISTA is expressed on a number of T cells subsets (e.g. CD4+ and CD8+ cells)<sup>2</sup>. Thus, VISTA can be considered both a ligand and a receptor, whereby it transmits both extrinsic and intrinsic inhibitory signals to T cells.



Intriguingly, VISTA is absent from tumor cells, unlike its closest relative, PD-L1<sup>2</sup>. However, like other immune checkpoints VISTA is found to be heightened on immune cells that infiltrate the tumor microenvironment (TME)<sup>1,2</sup>. Results from murine models suggest that VISTA and PD-1 suppress T cell function in a synergistic manner, and therefore combined therapy targeting both VISTA and PD-1 to enhance anti-tumor immunity is considered extremely promising<sup>4</sup>. Interestingly, VISTA is also implicated in the IL-23/IL-17 inflammatory axis<sup>3</sup>, making it a highly unique immune checkpoint that has been shown to play key roles in both innate and adaptive immune responses.

### IgG1 Isotype effector function

Anti-hVISTA-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-hVISTA-hIgG1NQ is severely compromised (see reverse side).

1. Nowak, E.C. *et al.* 2017. Immunoregulatory functions of VISTA. *Immunol Rev* 276, 66-79.
2. Xu, W. *et al.* 2018. The structure, expression, and multifaceted role of immune-checkpoint protein VISTA as a critical regulator of anti-tumor immunity, autoimmunity, and inflammation. *Cell Mol Immunol* 15, 438-446.
3. Li, N. *et al.* 2017. Immune-checkpoint protein VISTA critically regulates the IL-23/IL-17 inflammatory axis. *Sci Rep* 7, 148.
4. Liu, J. *et al.* 2015. Immune-checkpoint proteins VISTA and PD-1 nonredundantly regulate murine T-cell responses. *PNAS* 112:6682-7.

## METHODS

### Anti-hVISTA-hIgG1NQ resuspension (200 µg/ml)

*Note: Ensure you see the lyophilized pellet before resuspension.*

- Add 500 µl of sterile water to the vial and gently pipette until completely resuspended.
- Prepare aliquots and store at -20°C until required.

### TECHNICAL SUPPORT

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## ANTIBODY ISOTYPE COLLECTION

For your research, InvivoGen provides an **Anti-hVISTA isotype family**. This collection consists of mAbs comprising the variable region of human VISTA, and differing constant regions of both native and engineered human isotype IgG1. The 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-hVISTA 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-hVISTA-hIgG1	hvista-mab1
Anti-hVISTA-hIgG1fut	hvista-mab13
Jurkat-Lucia™ NFAT-CD16 cells	jktl-nfat-cd16
QUANTI-Luc™ 4 Lucia/Gaussia	rep-qlc4lg1

**Note:** For more information regarding InvivoGen's ADCC assay please visit our website <https://www.invivogen.com/adcc-adcp>.

### TECHNICAL SUPPORT

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