

Anti-hPD1-Ni-hIgG1fut

Non-fucosylated human IgG1 monoclonal antibody against human PD-1

Catalog code: hpd1ni-mab13-3

<http://www.invivogen.com/anti-hpd1-higg1fut>

For research use only, not for diagnostic or therapeutic use

Version 23L18-MM

PRODUCT INFORMATION

Contents: 3 x 100 µg Anti-hPD1-Ni-hIgG1fut purified monoclonal antibody (mAb) provided azide-free and lyophilized

Specificity: Targets cells expressing human programmed cell death 1 (hPD-1) receptor

Clonality: Monoclonal

Isotype: Human IgG1

Source: CHO cells

Formulation: 0.2 µm filtered solution in a 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 PD1 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-hPD1-Ni-hIgG1fut features the constant region of the human IgG1 isotype and the variable region of nivolumab. Nivolumab is a fully human IgG4 (S228P) monoclonal antibody that contains an engineered hinge region mutation (S228P) designed to prevent exchange of IgG4 molecules. It targets the PD-1 receptor found on activated T cells, B cells, and myeloid cells. PD-1 negatively regulates T cell activation thereby preventing autoimmunity¹. However, under pathological conditions, cancer cells produce PD-L1 (programmed cell death 1 ligand 1), the agonist that binds and activates PD-1 enabling the cancer cells to evade the immune system. Nivolumab binds and blocks the activation of the PD-1 receptor, thereby resulting in the activation of T cells and cell-mediated immune responses^{2,3}. It has been approved by the FDA for the treatment of melanoma and squamous non-small cell lung cancer.

Anti-hPD1-Ni-hIgG1fut is a non-fucosylated antibody. The absence of the fucose residue from the N-glycans of IgG-Fc results in dramatic enhancement of antibody-dependent cellular cytotoxicity (ADCC) without any detectable change in complement-dependent cytotoxicity (CDC) or antigen binding capability^{4,5}. It has been produced in CHO cells that are deficient for fucosylation and purified by affinity chromatography.

1. McDermott D. & Atkins M., 2013. PD-1 as a potential target in cancer therapy. *Cancer Med.* 2: 662–73. 2. Wang C. et al., 2014. In vitro characterization of the anti-PD-1 antibody nivolumab, BMS-936558, and in vivo toxicology in non-human primates. *Cancer Immunol Res.* 2:846–56. 3. Gunturi A. & McDermott DF., 2015. Nivolumab for the treatment of cancer. *Expert Opin Investig Drugs.* 24:253–60. 4. Yamane-Ohnuki N. & Satoh M., 2009. Production of therapeutic antibodies with controlled fucosylation corresponding MAbs. 1(3): 230–236. 5. Mizushima T., 2011. Structural basis for improved efficacy of therapeutic antibodies on defucosylation of their Fc glycan. *Genes Cells.* 16(11): 1071–1080.

TECHNICAL SUPPORT

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APPLICATIONS

Anti-hPD1-Ni-hIgG1fut can be used with Anti-hPD1-Ni-hIgG1 to compare the ADCC activity.

ANTIBODY ISOTYPE FAMILY

For your research, InvivoGen provides an anti-hPD1-Ni isotype family. This family consists of monoclonal antibodies comprising the variable region of Nivolumab, and the constant region of three different human isotypes; IgG1, IgG1fut, and IgG4(S228P). These mAbs vary in their potency to mediate effector functions, such as complement-dependent cytotoxicity (CDC), antibody-dependent cellular cytotoxicity (ADCC) and antibody-dependent cellular phagocytosis (ADCP), as presented in the table below.

Effector function	IgG1	IgG1fut	IgG4(S228P)
ADCC	++	++++	+/-
ADCP	+++	+++	+
CDC	++	++	-

METHODS

Anti-hPD1-Ni-hIgG1fut 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.
- Prepare aliquots and store at -20°C until required.

RELATED PRODUCTS

Product	Catalog Code
Anti-β-Gal-hIgG1fut (isotype control)	bgal-mab13
Anti-hPD1-Ni-hIgG1	hpd1ni-mab1
Anti-hPD1-Ni-hIgG4 (S228P) (Nivolumab)	hpd1ni-mab114

Other antibody isotype families are available, such as Anti-hCD20, Anti-HER2 and Anti-β-Gal (control). For more information, please visit www.invivogen.com/biosimilar-antibody-isotypes.