

# Anti-hPD1-Ni-hIgG1

Human IgG1 monoclonal antibody against human PD-1

Catalog code: hpd1ni-mab1, hpd1ni-mab1-03

<https://www.invivogen.com/anti-human-pd1-igg1-nivolumab>

For research use only, not for diagnostic or therapeutic use

Version 23L19-MM

## PRODUCT INFORMATION

**Contents:** Anti-hPD1-Ni-hIgG1 purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two quantities:

**hpd1ni-mab1:** 100 µg Anti-hPD1-Ni-hIgG1

**hpd1ni-mab1-03:** 3 x 100 µg Anti-hPD1-Ni-hIgG1

**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-hIgG1 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 autoimmunity<sup>1</sup>. 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<sup>2,3</sup>. It has been approved by the FDA for the treatment of melanoma and squamous non-small cell lung cancer.

Anti-hPD1-Ni-hIgG1 was generated by recombinant DNA technology. It has been produced in CHO cells and purified by affinity chromatography with protein G.

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 D.F., 2015. Nivolumab for the treatment of cancer. *Expert Opin Investig Drugs.* 24:253-60.

## 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-hIgG1 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-hIgG1 (isotype control)	bgal-mab1
Anti-hPD1-Ni-hIgG1fut	hpd1ni-mab13-3
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](http://www.invivogen.com/biosimilar-antibody-isotypes).

## TECHNICAL SUPPORT

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