

# Anti-hPD1-Ni-hIgG4 (S228P)

Engineered human IgG4 monoclonal antibody against human PD-1

Catalog code: hpd1ni-mab114, hpd1ni-mab114-1

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

For research use only, not for diagnostic or therapeutic use

Version 23L18-MM

## PRODUCT INFORMATION

**Contents:** Anti-hPD1-Ni-hIgG4 (S228P) purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two quantities:

**hpd1ni-mab114:** 100 µg Anti-hPD1-Ni-hIgG4 (S228P)

**hpd1ni-mab114-1:** 1 mg Anti-hPD1-Ni-hIgG4 (S228P)

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

**Clonality:** Monoclonal

**Isotype:** Human IgG4 (S228P)

**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-hIgG4 (S228P) features the constant region of the human IgG4 (S228P) isotype and the variable region of nivolumab. Nivolumab is a fully human IgG4 (S228P) monoclonal antibody that 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. Activated PD-1 enables 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>. This antibody contains an engineered hinge region mutation (S228P) designed to prevent exchange of IgG4 molecules. Nivolumab has been approved by the FDA for the treatment of melanoma and metastatic squamous non-small cell lung cancer (NSCLC).

Anti-hPD1-Ni-hIgG4 (S228P) 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(5): 662–673. 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(9):846–56. 3. Gunturi A. & McDermott DF., 2015. Nivolumab for the treatment of cancer. *Expert Opin Investig Drugs.* 24(2):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

### Antibody resuspension

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

- Add 1 ml of sterile water to 100 µg to obtain a stock solution at 100 µg/ml.
- Add 1 ml of sterile water to 1 mg to obtain a stock solution at 1 mg/ml.
- Gently pipette until completely resuspended.

## RELATED PRODUCTS

Product	Catalog Code
Anti-β-Gal-hIgG4 (S228P)	bgal-mab114
Anti-hPD1-Ni-hIgG1	hpd1ni-mab1

Other antibody isotype families are available, such as Anti-hCD20, Anti-HER2 and Anti-β-Gal (control).

For more information [www.invivogen.com/biosimilar-antibody-isotypes](http://www.invivogen.com/biosimilar-antibody-isotypes).

## TECHNICAL SUPPORT

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