

Anti-hPD1-Pem-hIgG1

Monoclonal human IgG1 antibody against human PD-1

Catalog code: hpd1pe-mab1, hpd1pe-mab1-03

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

For research use only, not for diagnostic or therapeutic use

Version 23L18-MM

PRODUCT INFORMATION

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

hpd1pe-mab1: 100 µg Anti-hPD1-Pem-hIgG1

hpd1pe-mab1-03: 3 x 100 µg Anti-hPD1-Pem-hIgG1

Target: Human programmed cell death 1 (hPD-1) receptor

Specificity: Cells expressing hPD-1

Clonality: Monoclonal antibody

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

- The recognition of PD1 has been tested using flow cytometry.
- 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-Pem-hIgG1 features the constant region of the human IgG1 isotype and the variable region of pembrolizumab. Pembrolizumab is a humanized IgG4 monoclonal antibody that contains an engineered hinge region mutation (S228P) designed to prevent exchange of IgG4 molecules. This antibody targets the PD-1 receptor found on activated T cells, B cells, and myeloid cells. Under normal physiological conditions, PD-1 negatively regulates T cell activation thereby preventing autoimmunity¹. 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. Pembrolizumab binds and blocks the activation of the PD-1 receptor, thereby resulting in the activation of T cells². Pembrolizumab has been approved by the FDA for the treatment of metastatic malignant melanoma, and is currently under regulatory review in the EU³.

Human IgG1 is the most abundant immunoglobulin present in serum and binds with high affinity to the Fc receptor on phagocytic cells. The human IgG1 isotype displays high antibody-dependent cell-mediated cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC).

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

1. McDermott D. & Atkins M. 2013. PD-1 as a potential target in cancer therapy. *Cancer Med.* 2(5): 662-673. 2. Tumeh PC. *et al.*, 2014. PD-1 blockade induces responses by inhibiting adaptive immune resistance. *Nature.* 515(7528):568-71. 3. Poole RM, 2014. Pembrolizumab: first global approval. *Drugs.* 4(16):1973-81.

TECHNICAL SUPPORT

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APPLICATIONS

Anti-hPD1-Pem-hIgG1 binds and blocks ligand activation of the PD-1 receptor found on the surface of activated T cells.

ANTIBODY ISOTYPE COLLECTION

For your research, InvivoGen provides an anti-hPD1-Pem isotype family. This family consists of monoclonal antibodies comprising the variable region of pembrolizumab, and the constant region of different human isotypes; IgG1 and IgG4 (S228P). The isotypes differ in their functional locations and effector functions, such as complement-dependent cytotoxicity (CDC) and antibody-dependent cell-mediated cytotoxicity (ADCC), as presented in the table below.

Isotype	Description
Human IgG1	Most abundant IgG present in serum High CDC, high ADCC
Human IgG4	Least common IgG present in serum No CDC, low ADCC
Human IgG4 (S228P)	Designed to prevent exchange of IgG4 molecules No CDC, low ADCC

METHODS

Anti-hPD1-Pem-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-Pem-hIgG4 (S228P) (Pembrolizumab)	hpd1pe-mab14

Isotype collections for other antibodies, including anti-hTNF-α, anti-hCD20 and anti-β-Gal (control) are also available. For more information visit www.invivogen.com/biosimilar-antibody-isotypes.