

Anti-hPD1-Pem-hIgG2

Monoclonal human IgG2 antibody against human PD-1

Catalog # hpd1pe-mab2

<http://www.invivogen.com/anti-hpd1-pem-higg2>

For research use only, not for diagnostic or therapeutic use

Version # 17J03-MM

PRODUCT INFORMATION

Content: 100 µg anti-hPD1-Pem-hIgG2, purified antibody, provided azide-free and lyophilized

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

Specificity: Cells expressing hPD-1

Clonality: Monoclonal antibody

Isotype: Human IgG2

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

Antibody resuspension

Add 1 ml of sterile water to obtain a concentration of 0.1 mg/ml.

Storage

- Product is shipped at room temperature. Store lyophilized antibody at -20°C. Lyophilized product is stable for at least 1 year.

- 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 with this antibody 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-hIgG2 features the constant region of the human IgG2 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 IgG2 is the second most common antibody present in serum. This isotype is resistant to cleavage by proteolytic enzymes, due to a short hinge region. Human IgG2 displays low complement-dependent cytotoxicity (CDC) and very low antibody-dependent cell-mediated cytotoxicity (ADCC).

Anti-hPD1-Pem-hIgG2 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-hIgG2 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, IgG2, IgG4 (S228P) and IgA2. 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 IgG2	Second most common IgG present in serum Low CDC, low 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
Human IgA2	Major class in secretions, oligomeric forms, highly resistant to enzymatic degradation. No CDC, low ADCC

RELATED PRODUCTS

Product	Catalog Code
Anti-β-Gal-hIgG2 (isotype control)	bgal-mab2
Anti-hPD1-Pem-hIgG1	hpd1pe-mab1
Anti-hPD1-Pem-hIgG4 (S228P) (Pembrolizumab)	hpd1pe-mab14
Anti-hPD1-Pem-hIgA2	hpd1pe-mab7

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/antibody-isotypes