

Anti-HER2-Tra-hIgG4 (S228P)

Monoclonal human IgG4 antibody against HER2/neu

Catalog # her2tra-mab14

For research use only, not for diagnostic or therapeutic use

Version # 15K10-MM

PRODUCT INFORMATION

Content: 100 µg anti-HER2-Tra-hIgG4 (S228P), purified antibody, provided azide-free and lyophilized.

Specificity: Human epidermal growth factor receptor 2 (HER2)

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.

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

- Binding of Anti-HER2-Tra-hIgG4 (S228P) to HER2 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-HER2-Tra-hIgG4 (S228P) features the constant region of the human IgG4 (S228P) isotype and the variable region of trastuzumab. Trastuzumab is a humanized IgG1 monoclonal antibody that targets the human epidermal growth factor receptor 2 (HER2, also known as HER2/neu or ERBB2) that is found on the cell membrane of epithelial cells. HER2 plays an important role in normal cell growth and differentiation¹. However, in certain types of cancers, particularly in breast and ovarian cancers, HER2 is over-expressed and causes uncontrollable cell proliferation. Binding of trastuzumab to HER2 results in cell death through different mechanisms including antibody-dependent cell-mediated cytotoxicity and phagocytosis^{2, 3}. Trastuzumab has been approved by the FDA for the treatment of breast cancer.

Anti-HER2-Tra-hIgG4 (S228P) contains an engineered hinge region mutation (S228P) designed to prevent exchange of IgG4 molecules.

Anti-HER2-Tra-hIgG4 (S228P) was generated by recombinant DNA technology. It has been produced in CHO cells and purified by affinity chromatography with protein G.

1. Rubin I. & Yarden Y. 2001. The basic biology of HER2. *Ann Oncol.*12 Suppl 1:S3-8.
2. Collins DM. et al., 2012. Trastuzumab induces antibody-dependent cell-mediated cytotoxicity (ADCC) in HER-2-non-amplified breast cancer cell lines. *Ann Oncol.* 23(7):1788-95. **3. Petricevic B. et al., 2013.** Trastuzumab mediates antibody-dependent cell-mediated cytotoxicity and phagocytosis to the same extent in both adjuvant and metastatic HER2/neu breast cancer patients. *J Transl Med.* 11:307.

ANTIBODY ISOTYPE FAMILY

For your research, InvivoGen provides an anti-HER2-Tra isotype family. This family consists of monoclonal antibodies comprising the variable region of trastuzumab, and the constant region of three different human isotypes; IgG1, IgG4 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 IgG4	Least common IgG present in serum 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-HER2-Tra-hIgG1 (Trastuzumab)	her2tra-mab1
Anti-HER2-Tra-hIgA2	her2tra-mab7

Other antibody isotype families are available, such as Anti-hCD20, Anti-hPD1 and Anti-β-Gal (control).

For more information visit www.invivogen.com/antibody-isotypes

TECHNICAL SUPPORT

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