

# Anti-HER2-Tra-hIgG4 (S228P)

Engineered human IgG4 monoclonal antibody against HER2/neu

Catalog code: her2tra-mab14, her2tra-mab14-03

<https://www.invivogen.com/anti-her2-igg4s228p-trastuzumab>

For research use only, not for diagnostic or therapeutic use

Version 23L19-MM

## PRODUCT INFORMATION

**Contents:** Anti-HER2-Tra-hIgG4 (S228P) purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two quantities:

**her2tra-mab14:** 100 µg Anti-HER2-Tra-hIgG4 (S228P)

**her2tra-mab14-03:** 3 x 100 µg Anti-HER2-Tra-hIgG4 (S228P)

**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

**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 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 differentiation<sup>1</sup>. 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<sup>2-3</sup>. 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 D.M. 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 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(S228P), and IgA2. 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	IgG4(S228P)	IgA2
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.
- Gently pipette until completely resuspended.

## RELATED PRODUCTS

Product	Catalog Code
Anti-β-Gal-hIgG4 (S228P)	bgal-mab114
Anti-HER2-Tra-hIgG1 (Trastuzumab)	her2tra-mab1
Anti-HER2-Tra-hIgA2	her2tra-mab7

Other antibody isotype families are available, such as Anti-hCD20, Anti-hPD-1 and Anti-β-Gal (control).

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

## TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Asia: +852 3622-3480

E-mail: [info@invivogen.com](mailto:info@invivogen.com)