Anti-TROP2-hIgG1

Recombinant human monoclonal IgG1 antibody against TROP2

Catalog code: trop2-mab1-1

https://www.invivogen.com/anti-trop2

For research use only

Version 23J12-NJ

PRODUCT INFORMATION

Contents: 1 mg purified Anti-TROP2-hIgG1 monoclonal antibody (mAb), provided azide-free and lyophilized
Target: Human trophoblast cell-surface antigen 2 (TROP2)
Variable region biosimilar: Sacituzumab
Source: Chinese hamster ovary (CHO) cells
Isotype: Human IgG1, kappa
Purification: By affinity chromatography with protein A
Formulation: 0.2 µm filtered solution in 150 mM sodium chloride, 20 mM sodium phosphate buffer with 5% saccharose
Tested applications: Flow cytometry, ELISA, Antibody-drug conjugation

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 at 4 °C and for 1 year at -20 °C. Avoid repeated freeze-thaw cycles.

Quality control

- Binding of Anti-TROP2-hIgG1 to TROP2 has been validated using flow cytometry, ELISA, and antibody-drug conjugate (ADC)-based cellular assays.
- The complete sequence of the antibody has been verified.
- Absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and TLR4 cellular assays.

PRODUCT DESCRIPTION

Anti-TROP2-hIgG1 is a recombinant monoclonal antibody (mAb) that targets human trophoblast cell-surface antigen 2 (TROP2, also known as tumor associated calcium signal transducer 2, TACSTD2). It features the variable region of sacituzumab and the constant region of the hIgG1 isotype. Anti-TROP2-hIgG1 was generated by recombinant DNA technology, produced in CHO cells, and purified by affinity chromatography with protein A.

IgG1 Isotype effector function

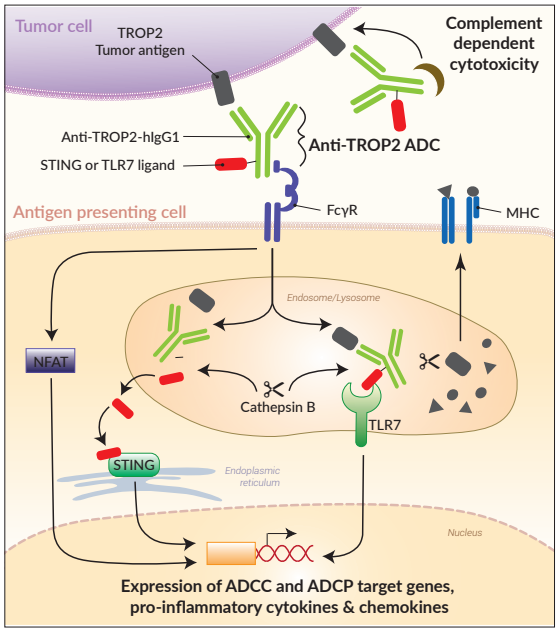
Human IgG1 binds with high affinity to the Fc receptor on phagocytic cells. Therefore, hIgG1 mAbs display high effector function, including antibody-dependent cell-mediated cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC).

Applications

Anti-TROP2-hIgG1 has been specifically developed for the generation of antibody-drug conjugates. The antibody formulation contains no tris, cysteine, glycine, nor any other amine or thiol function.

BACKGROUND

TROP2 (human trophoblast cell-surface antigen 2) is a transmembrane protein expressed in normal human tissues, including breast, cervix, kidney, lung, and pancreas, and is upregulated in most tumors of epithelial origin[1]. TROP2 plays an important role in embryonic development and is implicated in several oncogenetic signaling pathways leading to proliferation[1].
One therapeutic strategy aiming at killing TROP2$^+$ cancer cells, notably in triple-negative breast cancer patients, uses the FDA-approved antibody-drug conjugate (ADC) Trodelvy[2,3]. It consists of the combination of the Anti-TROP2 sacituzumab and the SN-38 cytotoxic payload[2,3]. This ADC allows targeted drug delivery to cancer cells (thus limiting systemic side-effects) in addition to the mAb-mediated effector functions[2,3]. Other TROP2-targeting ADCs featuring different cytotoxic cargos have been developed and have progressed to human clinical trials[4].



1. Trerotola, M., *et al.*, 2013. Upregulation of Trop-2 quantitatively stimulates human cancer growth. Oncogene 32, 222. 2. Drago J.Z. *et al.*, 2021. Unlocking the potential of antibody–drug conjugates for cancer therapy. Nat Rev Clin Oncol. 18-6:327. 3. Tarantino P. *et al.*, 2022. Antibody-drug conjugates: smart chemotherapy delivery across tumor histologies. CA Cancer J Clin. 72:165. 4. Shaffer, C. 2021. Trop2 deal heats up antibody–drug conjugate space in cancer. Nat Biotechnol 39, 128.

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

PROTOCOLS

Antibody-drug conjugation

For conjugation protocols of the monoclonal antibody to STING or TLR7 agonists, using either cysteine-based thioether coupling or click-chemistry coupling, please refer to the technical data sheets of :

- STG-982 and STG-968, STING agonists with maleimide and azido group, respectively: https://www.invivogen.com/sting-conjugatable-ligands.
- TL7-887 and TL7-975, TLR7 agonists with maleimide and azido group, respectively: https://www.invivogen.com/tlr7-conjugatable-ligands.

Note: Anti-β-Gal-hIgG1 mAb can be used to generate control ADC.*

ADC-mediated cell stimulation

The biological functions of ADCs can be assessed using reporter cell lines co-expressing the targeted tumor antigen and PRR (e.g. STING or TLR7). Examples of such mono-culture models are shown in the validation data sheets of the STG-968 and TL7-975 conjugatable ligands (see URLs above).

Altenatively, the biological functions of ADCs can be assessed using co-cultures of tumor cell lines expressing the targeted tumor antigen and human peripheral blood monocytes (PBMCs), myeloid antigen presenting cells, or reporter THP-1 monocytes. Examples of such co-culture models are shown in the validation data sheets of the Anti-TROP2-hIgG1, as well as in different reports[6,7].

6. Ackerman S.E. *et al.*, 2021. Immune-stimulating antibody conjugates elicit robust myelid activation and durable antitumor immunity. Nature Cancer. 2(1):18-33.
7. Duvall J.R. *et al.*, 2021. XMT-2056, a well-tolerated, Immunosynthen-based STING-agonist antibody-drug conjugate which induces anti-tumor immune activity. Cancer Research 81(13):1738.

RELATED PRODUCTS

Product	Description	Cat.Code
TL7-887	Conjugatable TLR7 ligand	vac-tl7887
TL7-975	Conjugatable TLR7 ligand	vac-tl7975
STG-982	Conjugatable STING ligand	vac-stg982
STG-968	Conjugatable STING ligand	vac-stg968
Anti-β-Gal-hIgG1*	Monoclonal antibody	bgal-mab1-1
Anti-HER2-hIgG1	Monoclonal antibody	her2-mab1-1
HEK-Blue™ IL-6 cells	IL-6 reporter cells	hkb-hil6
QUANTI-Blue™	Detection reagent	rep-qbs

To learn more about antibody drug conjugates and conjugatable ligands, please visit https://www.invivogen.com/conjugatable-ligands.