Anti-hEGFR-hIgG1fut

Non-fucosylated monoclonal human IgG1 antibody against human EGFR

Catalog # hegfr-mab13

http://www.invivogen.com/anti-hegfr-higg1fut

For research use only, not for diagnostic or therapeutic use

Version # 17D25-MM

PRODUCT INFORMATION

Content: 100 µg anti-hEGFR-hIgG1fut, purified antibody, provided azide-free and lyophilized
Specificity: Epidermal growth factor receptor (EGFR)
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

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.
- 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 to human EGFR 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-hEGFR-hIgG1fut features the constant region of the human IgG1 isotype and the variable region of cetuximab. Cetuximab is a chimeric human/mouse IgG1 monoclonal antibody that targets EGFR, a cell surface receptor overexpressed in many types of cancer. EGFR is activated by binding specific ligands, including epidermal growth factor and transforming growth factor-α. Activation of EGFR promotes cell proliferation and survival, as well as angiogenesis, leading to tumor growth and metastasis. Binding of cetuximab to EGFR blocks ligand-receptor binding and induces receptor internalization and subsequent degradation. Consequently, cetuximab blocks downstream pathways which regulate cell growth and angiogenesis. In addition, cetuximab induces cell death through antibody-dependent cell-mediated cytotoxicity (ADCC)[1, 2]. Cetuximab has been approved by the FDA for the treatment of metastatic colorectal cancer and metastatic squamous cell carcinoma of the head and neck[3].

Anti-hEGFR-hIgG1 is a non-fucosylated antibody. The absence of the fucose residue from the N-glycans of IgG-Fc results in dramatic enhancement of antibody-dependent cellular cytotoxicity (ADCC) without any detectable change in complement-dependent cytotoxicity (CDC) or antigen binding capability[4, 5]. This antibody was generated by recombinant DNA technology. It has been produced in CHO cells that are deficient for fucosylation and purified by affinity chromatography with protein G.

1. Kurai J. *et al.*, 2007. Antibody-dependent cellular cytotoxicity mediated by cetuximab against lung cancer cell lines. Clin Cancer Res. 3:1552-61. **2. Kimura H. *et al.*, 2007.** Antibody-dependent cellular cytotoxicity of cetuximab against tumor cells with wild-type or mutant epidermal growth factor receptor. Cancer Sci. 98:1275-80. **3. Vincenzi B. *et al.*, 2010.** Cetuximab: from bench to bedside. Curr Cancer Drug Targets. 10:80-95. **4. Yamane-Ohnuki N. & Satoh M., 2009.** Production of therapeutic antibodies with controlled fucosylation. corresponding MAbs. 1:230–236. **5. Mizushima T., 2011.** Structural basis for improved efficacy of therapeutic antibodies on defucosylation of their Fc glycans. Genes Cells. 16: 1071–80.

APPLICATIONS

Anti-hEGFR-hIgG1fut can be used with Anti-hEGFR-hIgG1 to compare the ADCC activity.

ANTIBODY ISOTYPE FAMILY

For your research, InvivoGen provides an anti-hEGFR isotype family. This family consists of monoclonal antibodies comprising the variable region of cetuximab, and the constant region of different human isotypes; IgG1, IgG2, 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 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-hIgG1fut (non-fucosylated)	bgal-mab13
Anti-hEGFR-hIgG1	hegfr-mab1
Anti-hEGFR-hIgG1NQ (non-glycosylated)	hegfr-mab12
Anti-hEGFR-hIgG2	hegfr-mab2
Anti-hEGFR-hIgG4 (S228P)	hegfr-mab14
Anti-hEGFR-hIgA2	hegfr-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

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