

Anti-hTGF- β -IgA

Neutralizing IgA monoclonal antibody to human tumor growth factor-beta

Catalog # maba-htgfb-3

For research use only, not for diagnostic or therapeutic use

Version # 15C26-MM

PRODUCT INFORMATION

Content

3 x 100 μ g purified anti-hTGF- β -IgA antibody, provided azide-free and lyophilized

Target: natural and recombinant human TGF- β 1 (hTGF- β 1)

Clone: H7WM214

Isotype: Human IgA2

Formulation: 0.2 μ m filtered solution in Tris HCl buffer with saccharose, glycine and stabilizing agents

Antibody resuspension

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

Storage

- Product is shipped at room temperature. Store lyophilized antibody at -20 $^{\circ}$ C. Product is stable for at least 1 year.

- Reconstituted antibody is stable for 1 month when stored at 4 $^{\circ}$ C and for 1 year when aliquoted and stored at -20 $^{\circ}$ C. Avoid repeated freeze-thaw cycles.

Quality control

- This product has been validated for neutralization.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue[™] TLR2 and HEK-Blue[™] TLR4 cells.

BACKGROUND

Tumor growth factor-beta (TGF- β) is a secreted cytokine that regulates numerous cellular functions, such as cell proliferation, apoptosis, differentiation and migration^{1,2}. TGF- β exists in at least three isoforms; TGF- β 1, TGF- β 2 and TGF- β 3. In the immune system, TGF- β 1 is the predominant isoform¹. TGF- β 1 is produced by many cell types, including macrophages, in a latent form which is bound to two other polypeptides, latent TGF- β 1 binding protein (LTBP) and latency-associated peptide (LAP). These proproteins are cleaved to release the mature TGF- β 1 that binds to a type II receptor which in turn recruits and activates a type I receptor. The type I receptor then phosphorylates receptor-regulated Smads (R-Smads), such as Smad2 and Smad3, which associate with Smad4³. R-Smad/Smad4 complexes accumulate in the nucleus where they regulate the transcription of target genes.

1. Travis MA. & Sheppard D., 2014. TGF- β activation and function in immunity. *Annu Rev Immunol.* 32:51-82. **2. Taylor AW., 2009.** Review of the activation of TGF-beta in immunity. *J Leukoc Biol.* 85(1):29-33. **3. Dennler S. et al., 1998.** Direct binding of Smad3 and Smad4 to critical TGF beta-inducible elements in the promoter of human plasminogen activator inhibitor-type 1 gene. *EMBO J.* 17(11):3091-100.

DESCRIPTION

Anti-hTGF- β -IgA is a chimeric monoclonal antibody specific for human TGF- β ligand (hTGF- β). It was generated by combining the constant domains of the human IgA molecule with murine variable regions. Anti-hTGF- β -IgA has been selected for its ability to efficiently neutralize the biological activity of hTGF- β 1.

APPLICATIONS

Anti-hTGF- β -IgA is a neutralizing antibody, it blocks hTGF- β -induced cellular activation.

Neutralization

The exact concentration of antibody required to neutralize hTGF- β activity is dependent on the cytokine concentration, cell type and growth conditions. InvivoGen has determined the neutralization dose for this antibody using recombinant hTGF- β 1 and HEK-Blue[™] TGF- β cells. These HEK293 cells stably express the human TGFBR1, Smad3, and Smad4 genes, as well as a Smad3/4-inducible SEAP (secreted embryonic alkaline phosphatase) reporter gene.

Anti-hTGF- β -IgA (30 ng-10 μ g/ml) and a negative control antibody (e.g. Human IgA2 Control which targets *E. coli* β -galactosidase) were incubated with a recombinant hTGF- β 1 at 1-5 ng/ml for 30 min prior to the addition of the HEK-Blue[™] TGF- β cells. Neutralization of TGF- β -induced signaling by anti-hTGF- β -IgA was determined after 24 hour incubation by assessing SEAP production using QUANTI-Blue[™]. QUANTI-Blue[™] is a SEAP detection medium that turns blue following cytokine stimulation but remains pink if neutralization occurs. SEAP levels can be assessed by the naked eye or spectrophotometrically by reading the OD at 620-655 nm.

RELATED PRODUCTS

Product	Catalog Code
HEK-Blue [™] TGF- β Cells	hkb-tgfb
Human IgA2 Control	maba2-ctrl
QUANTI-Blue [™]	rep-qb1

TECHNICAL SUPPORT

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