

BCMA/TNFRSF17 Protein, Human (Biotinylated, HEK293, His-Avi)

Cat. No.:	HY-P78070
Synonyms:	CD269; TNFRSF17; BCMA; BCM; TNFRSF13A
Species:	Human
Source:	HEK293
Accession:	Q02223 (M1-A54)
Gene ID:	608
Molecular Weight:	Approximately 12 kDa&15-17 kDa

PROPERTIES

Biological Activity	<ol style="list-style-type: none"> 1. Immobilized Biotinylated Human BCMA His at 0.5 µg/mL (100µL/Well). Dose response curve for Anti-Human BCMA Ab hFc with the EC₅₀ of 0.12 µg/mL determined by ELISA. 2. Immobilized Anti-BCMA Antibody at 0.2 µg/mL (100 µL/well) on the plate. Dose response curve for Biotinylated Human BCMA, His Tag with the EC₅₀ of 2.4 ng/mL determined by ELISA.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years from date of receipt. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>BCMA is expressed preferentially by mature B lymphocytes, with minimal expression in hematopoietic stem cells or nonhematopoietic tissue^[1]. BCMA is almost exclusively expressed on plasmablasts and PCs^[2].</p> <p>The amino acid sequence of human BCMA protein has low homology for mouse BCMA protein.</p> <p>BCMA is a 184 amino acid and 20.2-kDa type III transmembrane glycoprotein, with the extracellular N terminus containing a conserved motif of 6 cysteines. BCMA has two agonist ligands: a proliferation-inducing ligand (APRIL) and B cell activating factor (BAFF). Upon binding of the ligands to BCMA, activates B cells (NF-κβ), rat sarcoma/mitogen-activated protein kinase (RAS/MAPK), and phosphoinositide-3-kinase-protein kinase B/Akt (PI3K-PKB/Akt) signaling pathway. These pathways result in proliferation stimulation by modulating cell cycle checkpoints, increasing survival by upregulating anti-apoptotic proteins, and production of cell adhesion molecules, angiogenesis factors, and immunosuppressive molecules^[2].</p> <p>BCMA can be used as a promising antigen to target using a variety of immuno-therapy treatments including CART cells, for</p>
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MM patients^[3]. BCMA markedly reduces plasma IgA, IgG, and IgM levels and splenic Ig heavy chain mRNA levels in mouse^[4]. In BCMA^{-/-} mice, the long-term survival of PCs is impaired, but lack of BCMA has no effect in short-lived PCs, B cell development, or early humoral immune response, and the splenic architecture and germinal centers appear intact in these BCMA-deficient mice^[5]. BCMA overexpression significantly promotes *in vivo* growth of xenografted MM cells in murine models^[6].

REFERENCES

- [1]. Nobari ST, et al. B-cell maturation antigen targeting strategies in multiple myeloma treatment, advantages and disadvantages. *J Transl Med.* 2022 Feb 10;20(1):82.
- [2]. Yu B, et al. BCMA-targeted immunotherapy for multiple myeloma. *J Hematol Oncol.* 2020 Sep 17;13(1):125.
- [3]. Perez-Amill L, et al. Preclinical development of a humanized chimeric antigen receptor against B cell maturation antigen for multiple myeloma. *Haematologica.* 2021 Jan 1;106(1):173-184.
- [4]. Sanchez E, et al. Soluble B-Cell Maturation Antigen Mediates Tumor-Induced Immune Deficiency in Multiple Myeloma. *Clin Cancer Res.* 2016 Jul 1;22(13):3383-97.
- [5]. O'Connor BP, et al. BCMA is essential for the survival of long-lived bone marrow plasma cells. *J Exp Med.* 2004 Jan 5;199(1):91-8.
- [6]. Tai YT, et al. APRIL and BCMA promote human multiple myeloma growth and immunosuppression in the bone marrow microenvironment. *Blood.* 2016 Jun 23;127(25):3225-36.
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