

## Biotin Human BCMA (CD269) Protein (C-Fc-Avi)

|                           |                            |
|---------------------------|----------------------------|
| <b>Catalog Number:</b>    | 802203, 802204             |
| <b>Size:</b>              | 25 ug, 100 ug              |
| <b>Target Name:</b>       | TNFRSF17, CD269, BCM, BCMA |
| <b>Regulatory Status:</b> | RUO                        |

### PRODUCT DETAILS

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| <b>Application:</b>           | ELISA, BLI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Format:</b>                | Liquid, Biotinylated                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Expression Host:</b>       | HEK293                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Species:</b>               | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Sources:</b>               | Human BCMA protein (NP_001183.2) (Met1-Ala54) with C-terminus Human IgG1 Fc-Avi tag is expressed in HEK293 cells. This protein was site-specifically labeled with Biotin by BirA ligase.                                                                                                                                                                                                                                                                                                     |
| <b>Accession Number:</b>      | Q02223                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Molecular Weight:</b>      | The protein has a predicted molecular weight of 34.3kDa. Under DTT-reducing conditions, it migrates at approximately 35-45 kDa on SDS-PAGE.                                                                                                                                                                                                                                                                                                                                                  |
| <b>Affinity Tag:</b>          | C-Fc-Avi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Purity:</b>                | >95% based on SDS-PAGE under reducing condition                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Formulation:</b>           | 1xPBS buffer, pH7.4, 0.22 µm filtered                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Endotoxin level:</b>       | Not tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Protein Concentration:</b> | 25µg size is bottled at 0.2mg/mL concentration. 100 µg size is supplied at a lot-specific concentration.                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Storage and Handling:</b>  | Briefly centrifuge the vial upon receipt. An unopened vial can be stored at 4°C for up to 2 weeks, or at -20°C or below for up to six months. The protein may be further diluted to 0.1 mg/mL using 0.22 µm-filtered PBS buffer (pH 7.4). For long-term storage, the diluted stock solution should be aliquoted and stored at ≤ -70°C to minimize freeze-thaw cycles. If additional dilution is required, carrier proteins such as FBS or BSA should be added to maintain protein stability. |
| <b>Recommended Usage:</b>     | For detection, use a secondary reagent with this product.                                                                                                                                                                                                                                                                                                                                                                                                                                    |

### BACKGROUND INFORMATION

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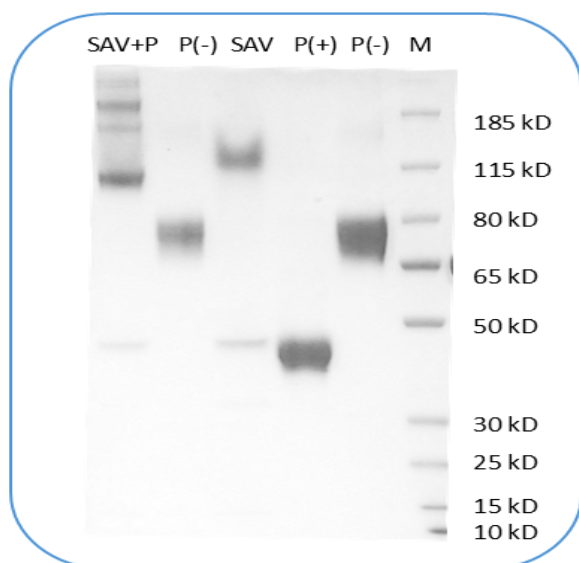
B-cell maturation antigen (BCMA), also known as CD269 or TNFRSF17, is a transmembrane glycoprotein that serves as a critical regulator of B cell development and function. It belongs to the tumor necrosis factor receptor (TNFR) superfamily and is predominantly expressed on plasma cells and a subset of late-stage B cells. BCMA's primary biological role is to promote the survival, differentiation, and long-term maintenance of antibody-producing plasma cells by mediating signals from specific ligands in the TNF family.

Structurally, BCMA is a type I transmembrane protein consisting of an extracellular cysteine-rich domain responsible for ligand binding, a single transmembrane region, and a short cytoplasmic tail that interacts with intracellular signaling molecules. The cytoplasmic domain lacks death domains but recruits TRAF (TNF receptor-associated factor) adaptor proteins to activate downstream pathways such as NF- $\kappa$ B and MAPK. These signaling cascades enhance plasma cell survival and immunoglobulin production, contributing to humoral immunity maintenance. Soluble BCMA, generated through proteolytic cleavage by  $\gamma$ -secretase, can act as a decoy receptor to regulate ligand availability in the serum.

BCMA binds two main ligands: B-cell activating factor (BAFF, also known as BLyS) and a proliferation-inducing ligand (APRIL). Both ligands are produced by myeloid and stromal cells and support B cell homeostasis. Among these, APRIL binds BCMA with higher affinity and is the primary mediator of BCMA-dependent signaling in plasma cells. The BAFF/APRIL-BCMA axis thus serves as a crucial checkpoint for sustained antibody production and plasma cell survival.

In disease contexts, BCMA is strongly implicated in multiple myeloma (MM) and certain B-cell lymphomas. Its selective overexpression on malignant plasma cells makes it an important diagnostic marker and a therapeutic target. BCMA-directed treatments have revolutionized therapy for multiple myeloma, including antibody-drug conjugates (e.g., belantamab mafodotin), bispecific T cell engagers (e.g., teclistamab, elranatamab), and CAR-T cell therapies (e.g., idecabtagene vicleucel, ciltacabtagene autoleucel). These agents exploit BCMA's restricted expression pattern to deliver targeted cytotoxicity, leading to durable responses in refractory disease. Consequently, BCMA has emerged as a prototypical target in the development of next-generation immunotherapies for hematologic malignancies.

## PRODUCT DATA



Human BCMA (C-Fc-Avi) was biotinylated in vitro using BirA ligase. SDS-PAGE analysis under reducing (P+) and non-reducing (P-) conditions shows the protein has a purity greater than 95%. A gel shift assay using co-incubation with streptavidin indicates that the biotinylation efficiency of the BCMA protein exceeds 95%.

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