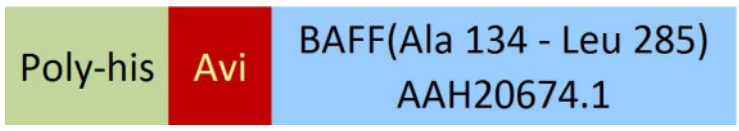
Synonym

TNFSF13B,BAFF,BLYS,CD257,DTL,TALL1,THANK,TNFSF20,ZTNF4,TALL-1

Source

Biotinylated Human BAFF Protein, His,Avitag(BAF-H82Q2) is expressed from human 293 cells (HEK293). It contains AA Ala 134 - Leu 285 (Accession # AAH20674.1).
Predicted N-terminus: His

Molecular Characterization



This protein carries a polyhistidine tag at the N-terminus, followed by an Avi tag (Avitag™).

The protein has a calculated MW of 20.2 kDa. The protein migrates as 21-23 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Labeling

Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.

Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

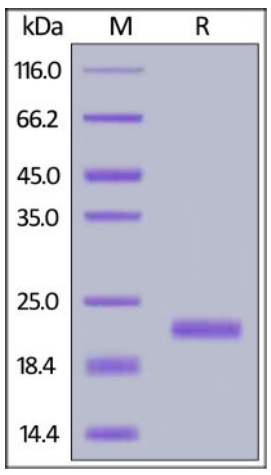
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

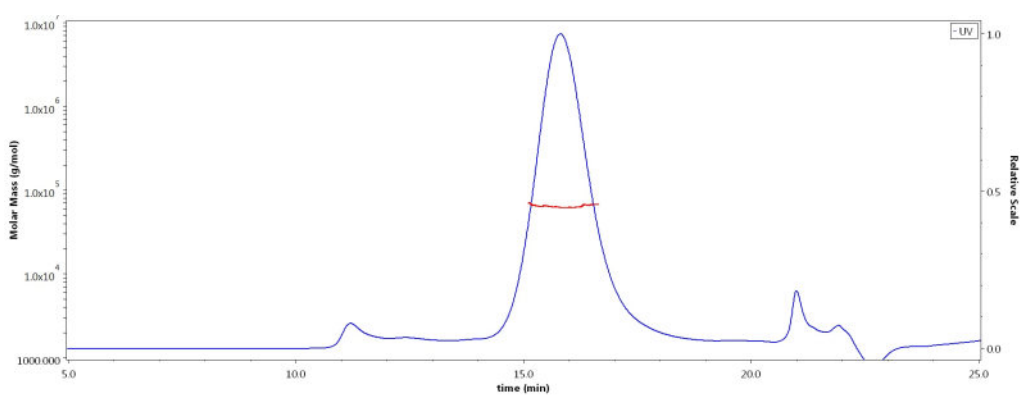
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



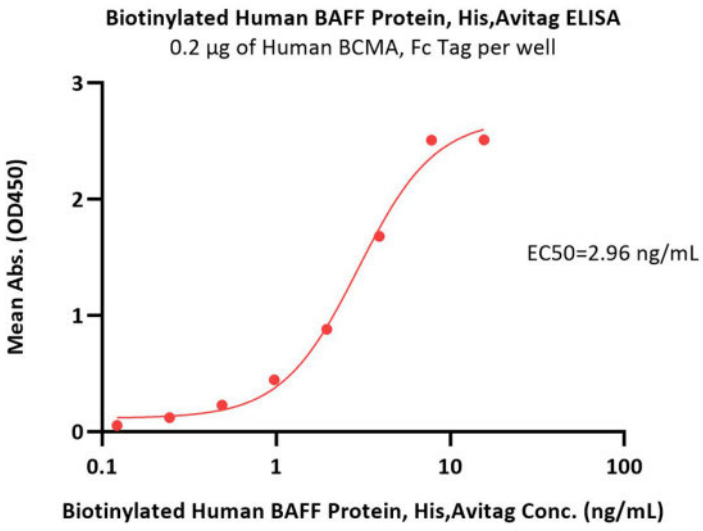
Biotinylated Human BAFF Protein, His,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS

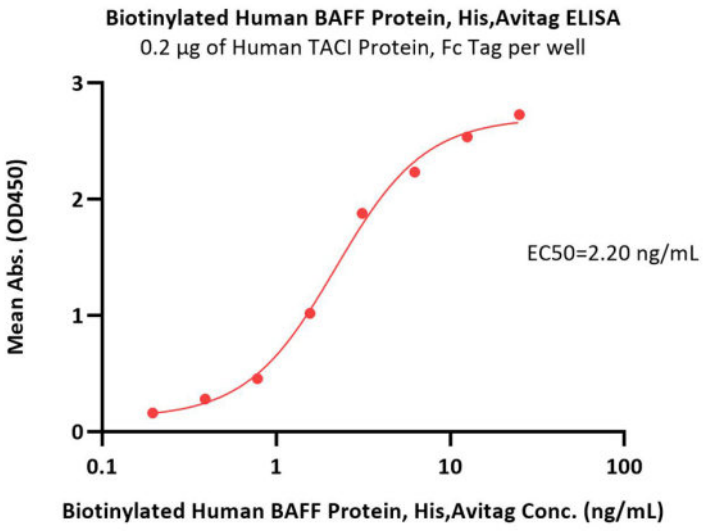


The purity of Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) is more than 90% and the molecular weight of this protein is around 60-75 kDa verified by SEC-MALS.
Report

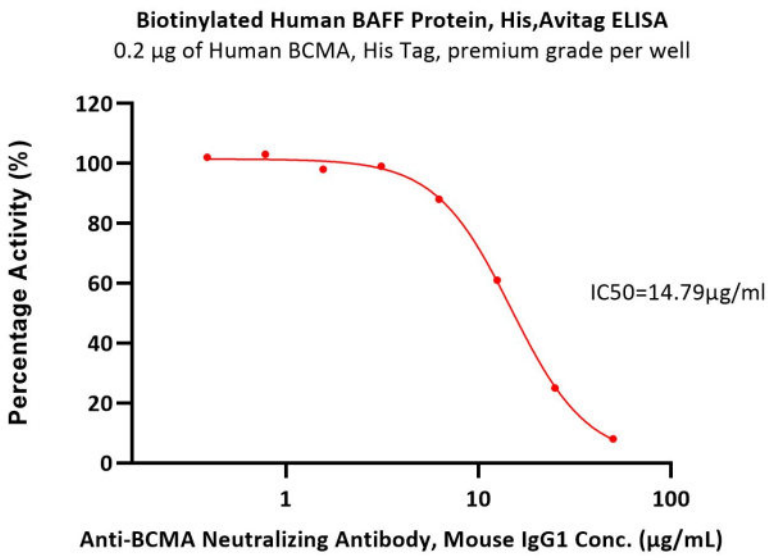
Bioactivity-ELISA



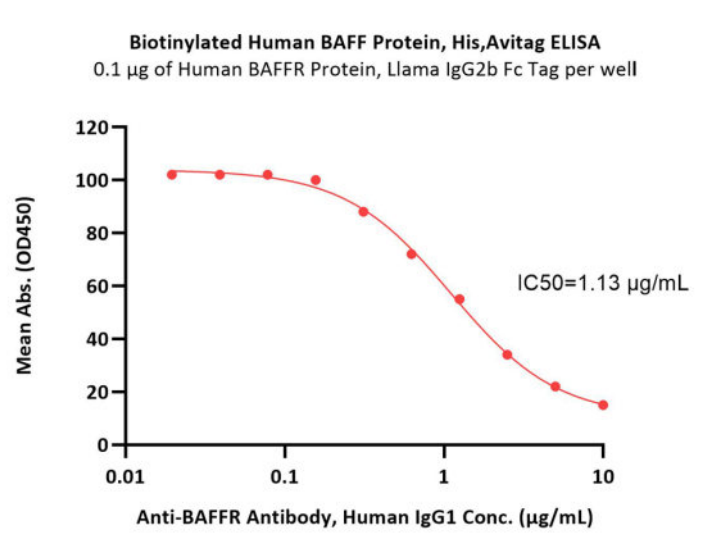
Immobilized Human BCMA, Fc Tag (Cat. No. BC7-H5254) at 2 μg/mL (100 μL/well) can bind Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) with a linear range of 0.2-4 ng/mL (QC tested).



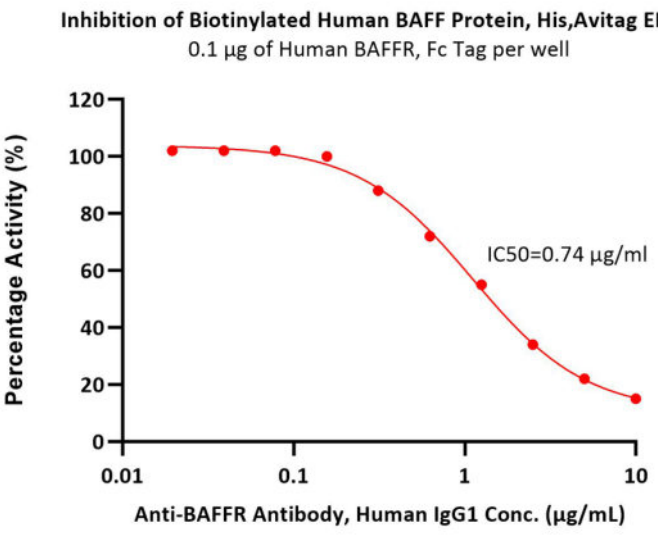
Immobilized Human TACI Protein, Fc Tag at 2 μg/mL (100 μL/well) can bind Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) with a linear range of 0.2-3 ng/mL (Routinely tested).



Immobilized Human BCMA, His Tag (Cat. No. BCA-H522y) at 2 μg/mL (100 μL/well) can bind pre-mixed increasing concentrations of Anti-BCMA Neutralizing Antibody, Mouse IgG1 (Clone: AM43, Cat. No. BCA-M43) and 0.01 μg/mL (100 μL/well) Biotinylated Human BAFF, His,Avitag (Cat. No. BAF-H82Q2) with a half maximal inhibitory concentration (IC50) of 14.79 μg/mL (Routinely tested).



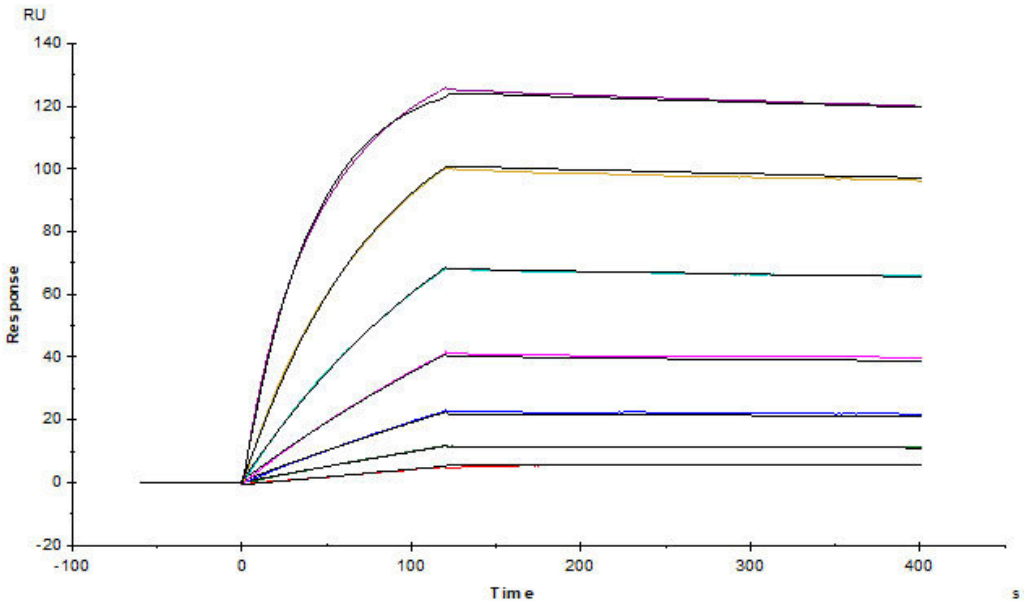
Serial dilutions of Anti-BAFFR Antibody, Human IgG1 were added into Human BAFFR Protein, Llama IgG2b Fc Tag (Cat. No. BAR-H5258): Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) binding reactions. The half maximal inhibitory concentration (IC50) is 1.1323 μg/mL (Routinely tested).



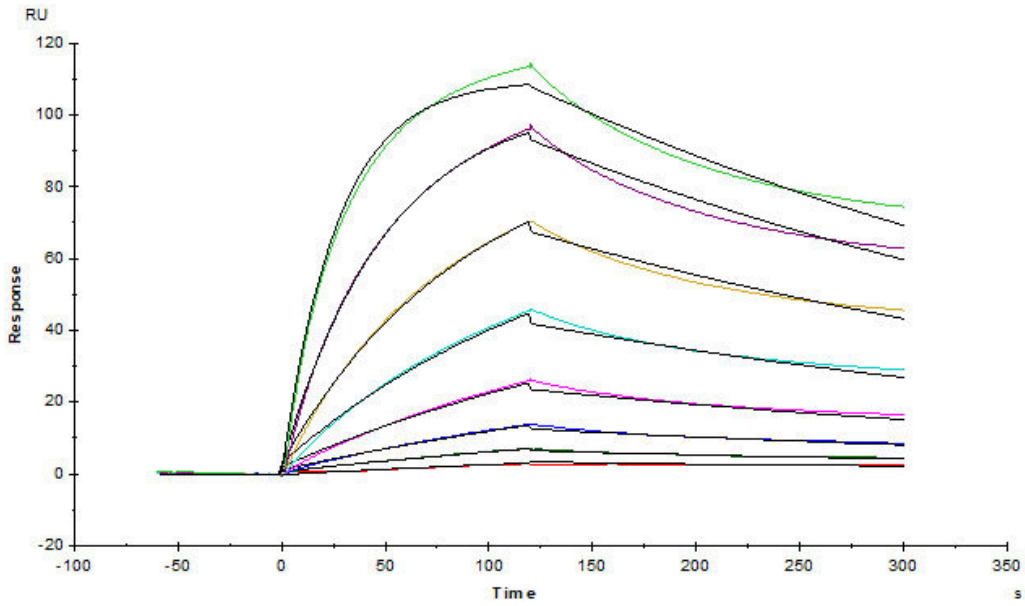
Serial dilutions of Anti-BAFFR Antibody, Human IgG1 were added into Human BAFFR, Fc Tag (Cat. No. BAR-H5257): Biotinylated Human BAFF

Protein, His,Avitag (Cat. No. BAF-H82Q2) binding reactions. The half maximal inhibitory concentration (IC50) is 0.7363 μg/mL (Routinely tested).

Bioactivity-SPR

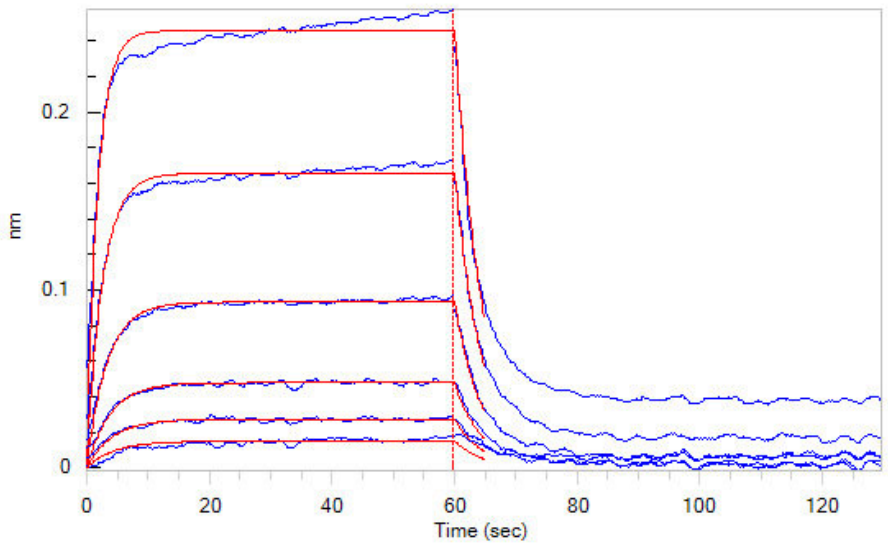


Immobilized Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) on SA Chip can bind Human TACI Protein, Fc Tag with an affinity constant of 1.35 nM as determined in a SPR assay (Biacore T200) (Routinely tested).



Immobilized Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) on SA Chip can bind Human BAFFR Protein, Llama IgG2b Fc Tag (Cat. No. BAR-H5258) with an affinity constant of 35.3 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

Bioactivity-BLI



Loaded Biotinylated Human BAFF Protein, His,Avitag (Cat. No. BAF-H82Q2) on SA Biosensor, can bind Human BCMA, His Tag (Cat. No. BCA-H522y) with an affinity constant of 1.1 μM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Background

B-cell activating factor (BAFF) is also known as tumor necrosis factor ligand superfamily member 13B , TNFSF13B, BAFF, B Lymphocyte Stimulator (BLyS) , cluster of differentiation 257 (CD257), DTL, TNF- and APOL-related leukocyte expressed ligand (TALL-1), THANK, TNFSF20, ZTNF4, and is a cytokine that belongs to the tumor necrosis factor (TNF) ligand family. This cytokine is a ligand for receptors TNFRSF13B/TACI, TNFRSF17/BCMA, and TNFRSF13C/BAFFR. This cytokine is expressed in B cell lineage cells, and acts as a potent B cell activator. It has been also shown to play an important role in the proliferation and differentiation of B cells. It is expressed as transmembrane protein on various cell types including monocytes, dendritic cells and bone marrow stromal cells. BAFF is

the natural ligand of three unusual tumor necrosis factor receptors named BAFF-R, TACI, and BCMA, all of which have differing binding affinities for it. These receptors are expressed mainly on mature B lymphocytes (TACI is also found on a subset of T-cells and BCMA on plasma cells). TACI binds worst since its affinity is higher for a protein similar to BAFF, called a proliferation-inducing ligand (APRIL). BCMA displays an intermediate binding phenotype and will work with either BAFF or APRIL to varying degrees. Signaling through BAFF-R and BCMA stimulates B lymphocytes to undergo proliferation and to counter apoptosis. All these ligands act as heterotrimers (i.e. three of the same molecule) interacting with heterotrimeric receptors, although BAFF has been known to be active as either a hetero- or homotrimer. BAFF acts as a potent B cell activator and has been shown to play an important role in the proliferation and differentiation of B cells.

Clinical and Translational Updates