

Animal-Free BAFF/TNFSF13B Protein, Mouse (His)

Cat. No.:	HY-P700161AF
Synonyms:	Tumor necrosis factor ligand superfamily member 13B; B lymphocyte stimulator; BLyS; B-cell-activating factor; BAFF; Dendritic cell-derived TNF-like molecule; TNF- and APOL-related leukocyte expressed ligand 1; TALL-1
Species:	Mouse
Source:	E. coli
Accession:	Q9WU72 (A127-L309)
Gene ID:	24099
Molecular Weight:	Approximately 21.56 kDa

PROPERTIES

AA Sequence	<p> M A F Q G P E E T E Q D V D L S A P P A P C L P G C R H S Q H D D N G M N L R N I I Q D C L Q L I A D S D T P T I R K G T Y T F V P W L L S F K R G N A L E E K E N K I V V R Q T G Y F F I Y S Q V L Y T D P I F A M G H V I Q R K K V H V F G D E L S L V T L F R C I Q N M P K T L P N N S C Y S A G I A R L E E G D E I Q L A I P R E N A Q I S R N G D D T F F G A L K L L </p>
Biological Activity	Measure by its ability to induce proliferation in mouse B cells. The ED ₅₀ for this effect is <0.5 ng/mL. The specific activity of recombinant mouse BAFF is > 2 x 10 ⁶ IU/mg
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 7.4.
Endotoxin Level	<0.1 EU per 1 µg of the protein by the 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. 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	B-cell Activating Factor (BAFF), belongs to tumor necrosis factor family, also known as B lymphocyte stimulator (BLyS), dendritic cell-derived TNF-like molecule, and TNF- and APOL-related leukocyte expressed ligand 1 (TALL-1). BAFF is the surpotor of autoreactive B cells, mainly expressed in myeloid cell lines. The expression level of BAFF is important with immunity, while excessive BAFF signaling can lead to autoimmunity. For example, BAFF is commonly overexpressed in Systemic Lupus Erythematosus (SLE). Furthermore, BAFF seems to be involved in adipogenesis, atherosclerosis, neuro-
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inflammatory processes and ischemia reperfusion (I/R) injury^[1]. DeltaBAFF is a conserved alternate splice isoform of BAFF, with a lack of 57 nt encoding the A-A1 loop. DeltaBAFF is co-expressed with BAFF in many mouse and human myeloid cells. DeltaBAFF in mouse is inefficiently released by proteolysis on plasma membrane, and binds to BAFF in heteromultimers to diminish BAFF bioactivity and release. Mouse BAFF protein has two glycosylated domains and one transmembrane domain (48-68 a.a.), and can be cleaved into membrane-type peptide fragments and soluble peptide fragments. Moreover, the protein sequences between human and mice are different with similarity of 68.23%^[2]. BAFF also involves in cancer immunity. BAFF upregulates multiple B cell costimulatory molecules; augments IL-12a expression and enhances B cell antigen-presentation to CD4⁺ Th cells in vitro. it also modulates T cell function through increased T cell activation and TH1 polarization, enhanced expression of the proinflammatory leukocyte trafficking chemokine CCR6, and promotion of a memory phenotype, leading to enhanced antitumor immunity. BAFF has distinct immunoregulatory functions, promoting the expansion of CD4⁺Foxp3⁺ Tregs in the spleen and tumor microenvironment (TME)^[3].

REFERENCES

- [1]. Möckel T, et al. B cell activating factor (BAFF): Structure, functions, autoimmunity and clinical implications in Systemic Lupus Erythematosus (SLE). *Autoimmun Rev.* 2021 Feb;20(2):102736.
- [2]. Gavin AL, et al. DeltaBAFF, an alternate splice isoform that regulates receptor binding and biopresentation of the B cell survival cytokine, BAFF. *J Biol Chem.* 2003 Oct 3;278(40):38220-8.
- [3]. Yarchoan M, et al. Effects of B cell-activating factor on tumor immunity. *JCI Insight.* 2020 May 21;5(10):e136417.
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