Recombinant Human BAFF/BLyS/TNFSF13B

Catalog Number: 2149-BF

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived human BAFF/BLyS/TNFSF13B protein

N-terminal Sequence Analysis	Met
Predicted Molecular Mass	19.6 kDa

SPECIFICATIONS

SDS-PAGE	22-29 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using anti-IgM stimulated mouse B cells. The ED_{50} for this effect is 0.4-2 ng/mL in the presence of goat anti-mouse IgM µ chain.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS, EDTA and DTT with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

B-cell activating factor (BAFF), also known as BLyS, TALL-1, THANK, and TNFSF13B, is a 32 kDa transmembrane glycoprotein in the TNF ligand superfamily. It is involved in multiple aspects of immune system regulation, particularly towards B cells (1, 2). Mature human BAFF consists of a 46 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 218 aa extracellular domain (ECD) with a stalk region and one TNF-like domain (3, 4). Within aa 134-285 of the ECD, human BAFF shares 72% aa sequence identity with mouse BAFF. It can be expressed as a homotrimer or as a heteromer in association with the related TNFSF member APRIL (4, 5). A 18 kDa fragment containing the TNF-like domain can be released by proteolysis between Arg133 and Ala134 (4). Soluble BAFF is stored intracellularly in neutrophils and released upon inflammatory stimulation (6). Alternative splicing generates an isoform termed deltaBAFF that lacks 19 aa between the proteolytic cleavage site and the TNF-like domain. deltaBAFF can form heteromers with BAFF and negatively regulates BAFF function (7). BAFF is produced by many hematopoietic cell types including by monocytes, macrophages, neutrophils, dendritic cells, and T cells and also by adipocytes (1, 2, 8). Both BAFF and APRIL are functional ligands for the TNF receptor superfamily members BCMA and TACI, and BAFF additionally binds and signals through BAFF R (9, 10). All three receptors are primarily expressed by B cells (10). BAFF plays a critical role in the development and survival of B lineage cells (2, 11, 12). Mice that overexpress BAFF exhibit elevated B cell numbers, increased formation and size of germinal centers, and symptoms of autoimmunity (13). Soluble BAFF is elevated in B cell malignancies, autoimmunity, and other immune disorders (1). In addition, BAFF co-stimulates T cell activation, promotes a Th1 biased immune response, and promotes the expansion of Treg cells (14-16). BAFF also promotes monocyte survival, proinflammatory cytokine secretion, and differentiation to macrophages (17).

References:

1. Lied, G.A. and A. Berstad (2011) Scand. J. Immunol. **73**:1.
2. Mackay, F. *et al.* (2010) Immunol. Rev. **237**:205.
3. Moore, P.A. *et al.* (1999) Science **285**:260.
4. Schneider, P. *et al.* (1999) J. Exp. Med. **189**:1747.
5. Roschke, V. *et al.* (2002) J. Immunol. **169**:4314.
6. Scapini, P. *et al.* (2003) J. Exp. Med. **197**:297.
7. Gavin, A.L. *et al.* (2003) J. Biol. Chem. **278**:38220.
8. Alexaki, V.-I. *et al.* (2009) J. Immunol. **183**:5948.
9. Yu, G. *et al.* (2000) Nat. Immunol. **1**:252.
10. Thompson, J.S. *et al.* (2001) Science **293**:2108.
11. Schiemann, B. *et al.* (2001) Science **293**:2111.
12. Litinskiy, M.B. *et al.* (2002) Nat. Immunol. **3**:822.
13. Batten, M. *et al.* (2000) J. Exp. Med. **192**:1453.
14. Huard, B. *et al.* (2001) J. Immunol. **167**:6225.
15. Sutherland, A.P.R. *et al.* (2005) J. Immunol. **174**:5537.
16. Walters, S. *et al.* (2009) J. Immunol. **182**:793.
17. Chang, S.K. *et al.* (2006) Blood **108**:2687.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449