

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human BPI protein		
	Human BPI (Val32-Lys487) Accession # AAA51841	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Val32		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	77.3 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	75-85 kDa, reducing conditions
Activity	Measured by its ability to inhibit LPS-induced IL-8 secretion by THP-1 human acute monocytic leukemia cells. Wilde, C.G. <i>et al.</i> (1994) J. Biol. Chem. 269 :17411. The ED ₅₀ for this effect is 0.4-2.4 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>90%, 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
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. <ul style="list-style-type: none"> ● 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

Bactericidal/Permeability Increasing protein (BPI) is a 55 kDa antibacterial glycoprotein that plays a role in innate immunity (1, 2). It belongs to the lipid transfer protein family that also includes LPS binding protein (LBP), cholesteryl ester transfer protein (CETP), and phospholipid transfer protein (PLTP). Circulating levels of BPI are positively correlated with the levels of cholesterol, LDL cholesterol, and HDL cholesterol (3). Mature human BPI shares approximately 55% amino acid (aa) sequence identity with mouse and rat BPI. It can be secreted as a monomer or as a disulfide-linked homodimer (4). It consists of a highly basic N-terminal and a hydrophobic C-terminal domain (5). Its N-terminal domain confers the ability of BPI to bind bacterial lipopolysaccharide (LPS) found in the cell walls of Gram negative bacteria and to induce the lysis and phagocytosis of these bacteria (6-9). It also blocks the endothelial cell response to endotoxin (10). BPI is stored in neutrophil and eosinophil granules for induced secretion during inflammation (11, 12). It is additionally expressed in mucosal epithelia and testis (10, 13). BPI can be retained on the surface of both neutrophils and epithelial cells, presumably by its hydrophobic C-terminal domain (8, 10). BPI also functions as an anti-angiogenic molecule by inhibiting vascular endothelial cell proliferation and tubule formation (14). Like the antibacterial actions, this function is mediated by the N-terminal region (15).

References:

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