Data Sheet (Cat.No.TMPY-02908)

TargetMol

BPI Protein, Human, Recombinant (His)

General Information

Synonyms: BPIFD1;bactericidal/permeability-increasing protein;rBPI

Protein Construction: Val32-Lys487

Species: Human

Expression Host: HEK293 Cells

Accession: P17213

Molecular Weight: 51.6 kDa (predicted); 50-60 kDa (reducing conditions)

QC Testing

Biological Activity: Activity is not tested. It is theoretically active, but we cannot guarantee it.

Purity: > 95% as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from a 0.2 μm filtered solution of 4mM HCl.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in 4mM HCl. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Bactericidal/permeability-increasing protein is a member of the BPI/LBP/Plunc superfamily and BPI/LBP family. It is a cationic protein which can be detected in the azurophilic granule and on the surface of polymorphonuclear leukocytes. Bactericidal/permeability-increasing protein also is a lipopolysaccharide binding protein. It is associated with human neutrophil granules and has bactericidal activity on gram-negative organisms. Bactericidal/permeability-increasing protein contains two domains that adopt the same structural fold, even though they have little sequence similarity. It binds to and neutralises lipopolysaccharides from the outer

membrane of Gram-negative bacteria. The cytotoxic action of bactericidal/permeability-increasing protein is limited to many species of Gram-negative bacteria; this specificity may be explained by a strong affinity of the very basic N-terminal half for the negatively charged lipopolysaccharides that are unique to the Gram-negative bacterial outer envelope.

Reference

G Schlag, et al. (1999) Protective effect of bactericidal/permeability-increasing protein (rBPI21) in baboon sepsis is related to its antibacterial, not antiendotoxin, properties. Annals of Surgery. 229(2): 262-71.
Michael Levin, et al. (2000) Recombinant bactericidal/permeability-increasing protein (rBPI21) as adjunctive treatment for children with severe meningococcal sepsis: a randomised trial. Lancet. 356 (9234):961-7.
Geraldine Canny, et al. (2002) Lipid mediator-induced expression of bactericidal/ permeability-increasing protein (BPI) in human mucosal epithelia. PNAS. 99(6):3902-7.
Elsbach, et al. (1998) The bactericidal/permeability-increasing protein (BPI) in antibacterial host defense (pdf). Journal of Leukocyte biology. 64(1):14-8.