SANTA CRUZ BIOTECHNOLOGY, INC.

BPI (D-3): sc-514434

BACKGROUND

The bactericidal permeability increasing protein (BPI) is an antibacterial and endotoxin-neutralizing molecule that is abundant in the granules of polymorphonuclear leukocytes (neutrophil granules). The 31.5-kb-long human BPI gene maps to chromosome 20q11.23, contains 15 exons, and encodes a 456 amino acid protein. Epithelial cells which line mucosal surfaces are the first line of defense against bacterial invasion and infection. BPI localizes to the cell surface of epithelial cells and blocks endotoxin-mediated signaling, thereby protecting mucosal surfaces against gram-negative bacteria and their endotoxin. BPI, lipopolysaccharide binding protein (LBP), phospholipid transfer protein (PLTP), and cholesteryl ester transfer protein (CETP) constitutes a family of functionally related proteins.

REFERENCES

1. Ooi, C.E., et al. 1987. A 25-kDa NH_2-terminal fragment carries all the antibacterial activities of the human neutrophil 60-kDa bactericidal/permeability-increasing protein. J. Biol. Chem. 262: 14891-14894.
2. Gray, P.W., et al. 1989. Cloning of the cDNA of a human neutrophil bactericidal protein. Structural and functional correlations. J. Biol. Chem. 264: 9505-9509.
3. Schumann, R.R., et al. 1990. Structure and function of lipopolysaccharide binding protein. Science 249: 1429-1431.
4. Gray, P.W., et al. 1993. The genes for the lipopolysaccharide binding protein (LBP) and the bactericidal permeability increasing protein (BPI) are encoded in the same region of human chromosome 20. Genomics 15: 188-190.
5. Hubacek, J.A., et al. 1997. The genomic organization of the genes for human lipopolysaccharide binding protein (LBP) and bactericidal permeability increasing protein (BPI) is highly conserved. Biochem. Biophys. Res. Commun. 236: 427-430.
6. Beamer, L.J., et al. 1997. Crystal structure of human BPI and two bound phospholipids at 2.4 angstrom resolution. Science 276: 1861-1864.
7. Canny, G., et al. 2002. Lipid mediator-induced expression of bactericidal/permeability-increasing protein (BPI) in human mucosal epithelia. Proc. Natl. Acad. Sci. USA 99: 3902-3907.

CHROMOSOMAL LOCATION

Genetic locus: BPI (human) mapping to 20q11.23.

SOURCE

BPI (D-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 227-254 to the elastase cleavage site of BPI of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514434 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

BPI (D-3) is recommended for detection of BPI of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for BPI siRNA (h): sc-42738, BPI shRNA Plasmid (h): sc-42738-SH and BPI shRNA (h) Lentiviral Particles: sc-42738-V.

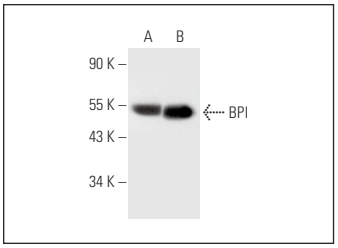
Molecular Weight of BPI: 50-60 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or AML-193 whole cell lysate: sc-364182.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



BPI (D-3): sc-514434. Western blot analysis of BPI expression in HL-60 (**A**) and AML-193 (**B**) whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.