

**DESCRIPTION**

**Source** Human embryonic kidney cell, HEK293-derived human BPIFB1 protein  
Thr22-Gln484, with a C-terminal 6-His tag  
Accession # Q8TDL5

**N-terminal Sequence Analysis** Thr22

**Predicted Molecular Mass** 51 kDa

**SPECIFICATIONS**

**SDS-PAGE** 55-61 kDa, under reducing conditions

**Activity** Measured by its ability to bind fluorescein-conjugated *E. coli* Bioparticles.  
The ED<sub>50</sub> for this effect is 30-240 ng/mL.

**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. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 500 µg/mL in PBS.

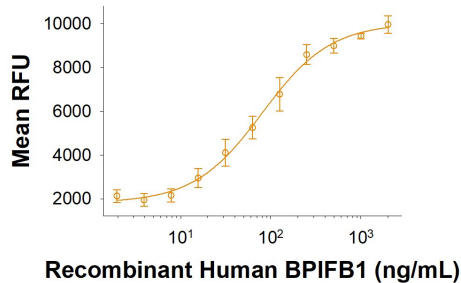
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 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.

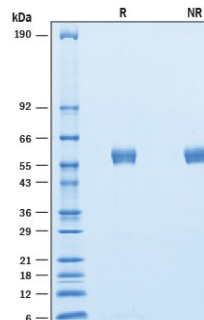
**DATA**

**Binding Activity**



Recombinant Human BPIFB1 His-tag binds to fluorescein-conjugated *E. coli* Bioparticles. The ED<sub>50</sub> for this effect is 30-240 ng/mL.

**SDS-PAGE**



2 µg/lane of Recombinant Human BPIFB1 His-tag was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 55-61 kDa.

**BACKGROUND**

BPIFB1 (BPI fold-containing family B member 1), also named LPLUNC1, is a member of the BPI-fold (BPIF) containing/Plunc (palate, lung, and nasal epithelium clone) superfamily of putative innate defense molecules which are predominantly expressed in regions of the oral cavity, nasopharynx and upper respiratory tract (1, 2). BPIF proteins exist as two subgroups, BPIFA (formally SPLUNCs) and BPIFB (formally LPLUNCs) (1, 3). BPIFA proteins have structural homology to the N-terminal domain of BPI whereas BPIFB proteins have structural homology to both domains of BPI (2). Human BPIFB1 cDNA encodes a 484 amino acid (aa) precursor protein with a putative 21 aa signal peptide and a 463 aa mature chain. The mature human BPIFB1 shares approximately 57% and 56% aa sequence identity with mouse and rat BPIFB1, respectively. BPIF proteins appear to exhibit distinct tissue and cell specific expression patterns with various family members, being localized to a number of glandular structures within the upper respiratory tract, nasopharyngeal regions and oral cavity where they are secreted from these tissues and are found in high levels in saliva and nasal and respiratory lining fluids (2). BPIFB1 plays a role in diverse functions, including neutralizing endotoxin (LPS) in septic shock patients, inhibition of endothelial cell growth, dendritic cell maturation, as an anti-angiogenic, chemoattractant or opsonization agent (2). Although less characterized as BPIFA1, BPIFB1 may also function as an innate immune molecule sensing and responding to Gram-negative bacteria (4). BPIFA1 and BPIFB1 expression was increased in late stage chronic obstructive pulmonary disease (COPD) patients, and elevated levels correlate with disease severity (5). BPIFB1 is also upregulated in cystic fibrosis (CF) lung disease and may play a role in the pathogenesis of the disease (6).

**References:**

1. Bingle, C. D. and C. J. Craven (2002) *Hum. Mol. Genet.* **11**:937.
2. Alves, D. B. *et al.* (2017) *Braz. Oral Res.* **31**:e6.
3. Bingle, L. *et al.* (2012) *Histochem. Cell Biol.* **138**:749.
4. Balakrishnan, A. *et al.* (2013) *Innate Immun.* **19**:339.
5. De Smet, E. G. *et al.* (2017) *Int. J. Chron. Obstruct. Pulmon. Dis.* **13**:11.
6. Saferali, A. *et al.* (2015) *Am. J. Respir. Cell. Mol. Biol.* **53**:607.