

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived human PLUNC protein
Gln20-Val256, with a C-terminal 6-His tag
Accession # Q9NP55.1

N-terminal Sequence Analysis Gln20; deblocked shows Phe21

Predicted Molecular Mass 25 kDa

SPECIFICATIONS

SDS-PAGE 21-28 kDa, under reducing conditions.

Activity Measured by its ability to bind fluorescein conjugated *E. coli* bio-particles. The ED₅₀ for this effect is 0.500-5.00 µg/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 with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 250 µg/mL in PBS.

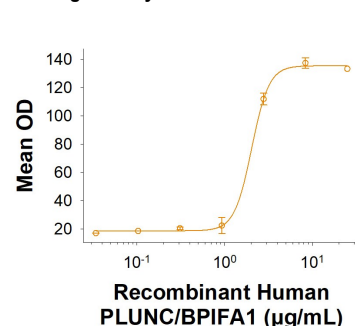
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.

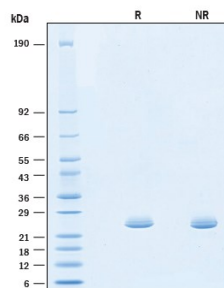
DATA

Binding Activity



Recombinant Human PLUNC BPIFA1 His-tag Protein Binding Activity. Measured by its ability to bind fluorescein conjugated *E. coli* bio-particles. The ED₅₀ for this effect is 0.500-5.00 µg/mL.

SDS-PAGE



Recombinant Human PLUNC BPIFA1 His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human PLUNC BPIFA1 His-tag Protein (Catalog # 11221-BF) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 21-28 kDa.

BACKGROUND

BPIFA1 (BPI fold-containing family A member 1), also named SPLUNC1, 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). The mature human BPIFA1 shares 68% amino acid (aa) identity with mouse and rat BIPFA1. BPIF proteins appear to exhibit distinct tissue and cell specific expression patterns with various family members, being localized to several 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). BPI proteins play a role in diverse functions, including neutralization of endotoxin (LPS) in septic shock patients, inhibition of endothelial cell growth, dendritic cell maturation, and function as an anti-angiogenic, chemoattractant or opsonization agent (2). BPIFA1 and BPIFB1 expression was increased in late-stage chronic obstructive pulmonary disease (COPD) patients, and elevated levels correlate with disease severity (4). BPIFs are also upregulated in cystic fibrosis (CF) lung disease and may play a role in the pathogenesis of the disease (5).

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. De Smet, E.G. *et al.* (2017) Int. J. Chron. Obstruct. Pulmon. Dis. **13**:11.
5. Saferali, A. *et al.* (2015) Am. J. Respir. Cell. Mol. Biol. **53**:607.