

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Leu21-Ile249, with a C-terminal 6-His tag
Accession # Q96DR5

N-terminal Sequence Analysis Leu21

Predicted Molecular Mass 25.9 kDa

SPECIFICATIONS

SDS-PAGE 30-40 kDa, reducing conditions

Activity Measured by its ability to inhibit LPS-induced TNF- α secretion by RAW 264.7 mouse monocyte/macrophage cells. Typically 5 μ g/mL of rhPSP will inhibit 30-60% of the TNF- α secretion induced by 0.5 ng/mL of LPS.

Endotoxin Level <0.01 EU per 1 μ g of the protein by the LAL method.

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 μ g/mL in sterile 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.

BACKGROUND

Parotid secretory protein (PSP; also short palate, lung, nasal epithelium carcinoma-associated protein 2 or SPLUNC2 and C20orf70) is a 36 – 40 kDa secreted glycoprotein and member of the Bactericidal permeability-increasing (BPI)/Lipopolysaccharide-binding protein (LBP)/PLUNC superfamily and PLUNC family of proteins (1). Human PSP is synthesized as a 249 amino acid (aa) precursor that contains an 18 aa signal sequence and a 231 aa mature chain. The mature chain contains one BPI/LBS/PLUNC domain (aa 62 – 220) and two potential sites for N-linked glycosylation. Mature human PSP is 31% and 26% aa identical to mature mouse and rat PSP, respectively. Human PSP is expressed in the parotid and submandibular glands in ductal epithelial cells and acinar cells (1 - 2). PSP has been shown to exhibit bacteristatic and bactericidal effects on *Pseudomonas aeruginosa* (1). In addition, PSP-derived peptides inhibit the binding of endotoxin to LBP and inhibit the endotoxin-stimulated secretion of tumor necrosis factor α from macrophages (1, 3). These findings suggest that PSP peptides can serve as templates for the design of novel anti-inflammatory peptides (3). One study showed that peptide GL-13 induced bacterial matting, suggesting passive agglutination of bacteria (4). GL-13 was shown to agglutinate Gram negative bacteria *P. aeruginosa* and *Aggregatibacter (Actinobacillus) actinomycetemcomitans*, Gram positive *Streptococcus gordonii* and uncoated sheep erythrocytes (4). The agglutination leads to increased clearance by host phagocytic cells.

References:

1. Geetha, C. *et al.* (2003) *Biochem. Soc. Trans.* **31**:815.
2. Bingle, C.D. and S.-U. Gorr (2004) *Int. J. Biochem. Cell Biol.* **36**:2144.
3. Geetha, C. *et al.* (2005) *J. Dent. Res.* **84**:149.
4. Gorr, S.-U. *et al.* (2008) *Peptides* **29**:2118.