Pancreatitis-Associated Protein-1 Human E. coli

**Product Data Sheet**

**Type:** Recombinant  
**Source:** E. coli  
**Species:** Human  
**Other names:** PAP1, PAP-1  
**Cat. No.:** RD172085100 (0.1 mg)

**Description**  
Total 165 AA. MW: 18.4 kDa (calculated). N-Terminal His-tag 16 AA (highlighted).

**Introduction to the Molecule**  
Pancreatitis-associated protein (PAP) is a secretory protein not normally expressed in healthy pancreas but highly induced during acute pancreatitis. While PAP has been shown to be anti-bacterial and anti-apoptotic in vitro, its definitive biological function in vivo is not clear. Using antisepse oligonucleotides, inhibition of PAP expression significantly worsened pancreatitis in a rat model. During pancreatitis, PAP released by the pancreas could mediate lung inflammation through induction of hepatic TNFalpha expression and subsequent increase in circulating TNFalpha. PAP is activated in primary liver cancers. In normal liver, the protein is undetectable in normal mature hepatocytes and found only in some ductular cells, representing potential hepatic progenitor cells. PAP can be considered hepatic cytokine that combines mitogenic and anti-apoptotic functions regarding hepatocytes, and consequently acts as a growth factor in vivo to enhance liver regeneration. In pancreatic cancer, PAP was overexpressed in 79% (30 of 38) of pancreatic ductal adenocarcinoma, 19% (7 of 36) of chronic pancreatitis, and 29% (2 of 7) of mucinous cystadenoma. PAP was found in malignant ductular structures in pancreatic carcinomas as well as in benign proliferating ductules and acinar cells in chronic pancreatitis. Elevation of PAP in patients with pancreatic cancer is not merely explainable by concomitant pancreatitis, but seems to be due to increased PAP production by the cancer cells and is also correlated to tumour load as expressed by the UICC stages. Epithelial expression of PAP was induced under intestinal mucosal inflammation initiated by exposure to commensal bacteria or DSS as well as inflamed IBD colon. Increased serum level of PAP diagnosed ileal location in active Crohn disease with a sensitivity of 60%, a specificity of 94%, a positive predictive value of 84% and a negative predictive value of 81%. Elevated serum PAP (> 50 ng/mL) is significantly associated with disease activity and ileal location of Crohn disease.

**Research topic**  
Pancreatic regulatory molecules

**Amino Acid Sequence**

MRGSHHHHHH GMASHM  
EEPQ RELPSARIRC PKGSKAYGSH CYALFLSPKS WTDADLACQK RPSGNLVSVL SGAEFGVSS  
LVKSIGNSYS YVWIGLHDFT QGTEPNEGGW EWSSSDVVMNY FAWERNFSTI SSPGHCASLS RSTAFLRWKD YNCHVRLPFV CKFTD

**Source**  
E. coli

**Purity**  
>95%
SDS-PAGE gel

12% SDS-PAGE separation of Human PAP-1
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 5µg/lane
3. non-reduced and non-heated sample, 5µg/lane

Formulation
Filtered (0.4 µm) and lyophilized in 0.5 mg/mL in 0.05M Acetate buffer pH 4

Reconstitution
Add 0.1M Acetate buffer pH4 to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. For conversion into higher pH value, we recommend intensive dilution by relevant buffer to a concentration of 10µg/mL. In higher concentrations the solubility of this antigen is limited. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

Storage, Stability/Shelf Life
Store lyophilized protein at -20°C. Lyophilized protein remains stable until the expiry date when stored at -20°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

Quality Control Test
BCA to determine quantity of the protein.
SDS PAGE to determine purity of the protein.

Applications
Western blotting

Note
This product is intended for research use only.

References