Regenerating Protein 1 alpha Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: REG-1-alpha, PSP, Pancreatic stone protein, Lithostatine, Litostathine-1-alpha, Pancreatic thread protein, PTP, Islet od langerhans regenerating protein, Regenerating islet-derived protein 1-alpha, Islet cell regeneration factor, IC

Cat. No.:

RD172078025	(0.025 mg)
RD172078100	(0.1 mg)

Description

Total 156 AA. MW: 17.8 kDa (calculated). UniProtKB acc.no. P05451. N-Terminal His-tag 12 AA (highlighted).

Introduction to the Molecule

Reg protein was shown to be stimulated during the regeneration of pancreatic islets. Since then, many Reg-related proteins have been identified in humans and other animals. In human, the four REG family genes, i.e., REG 1 alpha, REG 1 beta, REG-related sequence (RS) and HIP/PAP, have so far been isolated. These Reg-related proteins are classified into four subfamilies according to their amino-acid sequences, but they share a similar structure and physiological function. Reg protein is a growth factor for pancreatic beta cells and also suggest that the administration of Reg protein could be used as another therapeutic approach for diabetes mellitus. human REG cDNA which encoded a 166-amino acid protein with a 22-amino acid signal peptide. The amino acid sequence of human REG protein has 68% homology to that of rat Reg protein.
Reg I was found to be expressed mainly in pancreatic beta and acinoductular cells as well as gastric fundic enterochromaffin-like (ECL) cells. Reg I production in ECL cells is stimulated by gastrin, as well as by the proinflammatory cytokine, cytokine-induced neutrophil chemoattractant (CINC)-2Beta. In patients with chronic hypergastrinemia, Reg production is stimulated, with the increased proliferation of gastric mucosal cells. Patients with Helicobacter pylori infection also showed increased Reg production in the gastric mucosa, partly via increased plasma gastrin concentration and partly via increased proinflammatory cytokine production. The serum concentration of the reg-protein was significantly higher in patients with various pancreatic diseases than in normal controls, and was also significantly higher in patients with acute pancreatitis or chronic relapsing pancreatitis than in patients with chronic pancreatitis. Furthermore, the serum PSP/reg-protein concentration was also significantly increased in liver cirrhosis, choledocholithiasis, and various cancers of the digestive system.

Research topic

Diabetology - Other Relevant Products, Immune Response, Infection and Inflammation, Oncology, Pancreatic regulatory molecules

Amino Acid Sequence

MKHHHHHHAS HMQEAQTELP QARISCPEGT NAYRSYCYYF NEDRETWVDA DLYCQNMNSG NLVSVLTQAE GAFVASLIKE
SGTDDFNVWI GLHDPKKNRR WHWSSGSLVS YKSWGIGAPS SVNPGYCVSL TSSTGFQKWK DVPCEDKFSF VCKFKN

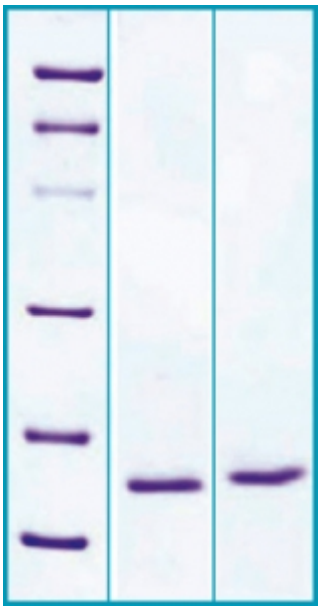
Source

E. coli

Purity

Purity as determined by densitometric image analysis: >95%

SDS-PAGE gel



12% SDS-PAGE separation of Human REG1 alpha
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 2.5µg/lane
3. non-reduced and non-heated sample, 2.5µg/lane

Endotoxin

< 1.0 EU/ug

Formulation

Filtered (0.4 µm) and lyophilized in 0.5 mg/mL in 20mM TRIS, 50mM NaCl, pH 7.5

Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store lyophilized protein at -80°C. Lyophilized protein remains stable until the expiry date when stored at -80°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.
LAL to determine quantity of endotoxin.

Applications

ELISA, Western blotting

Note

This product is intended for research use only. The Certificate of Analysis is available on www.biovendor.com

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