Data Sheet (Cat.No.TMPY-02513)

TargetMol

Pepsinogen C/PGC Protein, Rat, Recombinant (His)

General Information

Synonyms: progastricsin (pepsinogen C)

Protein Construction: A DNA sequence encoding the rat PGC (NP_579818.1) (Met 1-Val 392) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 17

Species: Rat

Expression Host: HEK293 Cells

Accession: A6JII4

Molecular Weight: 42.5 kDa (predicted); 43 kDa (reducing conditions)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 95 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 150 mM NaCl, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Pepsinogen C, also known as PGC, is an aspartic proteinase that belongs to the peptidase family A1. Pepsinogen C is synthesized in the gastric mucosa as inactive precursors, known as zymogens. Pepsinogen C contains a prosegment that serves to stabilize the inactive form and prevent entry of the substrate to the active site. At low PH conditions, Pepsinogen C undergoes conversion into active enzyme. Pepsinogen C has been found expressed in all regions of the stomach mucosa and also in the proximal duodenal mucosa. In stomach cancer tissues and cancer

cell lines, the expressions of the pepsinogen genes were decreased or lost, in good accordance with their pepsinogen productions. No gross structural changes of the pepsinogen genes were observed in these cancers, but the methylation patterns of the pepsinogen genes were found to be altered in different ways in different cancers. Serum levels of Pepsinogen C are used as a biomarker for certain gastric diseases including Helicobacter pylori related gastritis.

Reference

Richter C,et al.(1998) Mechanism of activation of the gastric aspartic proteinases: pepsinogen, progastricsin and prochymosin. Biochem J. 1 (335): 481-90.

Westerveld BD,et al.(1987) Gastric proteases in Barrett's esophagus. Gastroenterology. 93 (4): 774-8.

Ichinose M,et al.(1991) Methylation and expression of human pepsinogen genes in normal tissues and their alteration in stomach cancer. Jpn J Cancer Res. 82 (6): 686-92.

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