Data Sheet (Cat.No.TMPY-03260)

TargetMol

QPCT Protein, Human, Recombinant (His)

General Information

Synonyms:	QC;GCT;glutaminyl-peptide cyclotransferase;sQC
Protein Construction:	A DNA sequence encoding the human QPCT (Q16769-1) (Ala33-Leu361) was fused with a polyhistide tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q16769-1
Molecular Weight:	39.7 kDa (predicted); 38 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 20 mM Tris, 500 mM NaCl, pH 7.4, 10% gly. 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:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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

Glutaminyl cyclase, also known as QPCT, can promote the N-terminal cyclization reaction of N-terminal pyroglutamate(pGlu). The pGlu formation from its glutaminyl precursor is required in the maturation of numerous bioactive peptides, while the aberrant formation of pGlu may be related to several pathological processes, such as osteoporosis and amyloidotic diseases. Glutaminyl cyclase's structure reveals an alpha/beta scaffold akin to that of two-zinc exopeptidases but with several insertions and deletions, particularly in the active-site region.

Glutaminyl cyclase's amino acid sequence of this enzyme is 86% identical to that of bovine glutaminyl cyclase. It is responsible for the presence of pyroglutamyl residues in many neuroendocrine peptides.

Reference

Busby WH, et al. (1987) An enzyme(s) that converts glutaminyl-peptides into pyroglutamyl-peptides. Presence in pituitary, brain, adrenal medulla, and lymphocytes. J Biol Chem. 262(18):8532-6.

Bateman RC, et al. (2001) Evidence for essential histidines in human pituitary glutaminyl cyclase. Biochemistry. 40 (37):11246-50.

Schilling S, et al. (2002) Heterologous expression and characterization of human glutaminyl cyclase: evidence for a disulfide bond with importance for catalytic activity. Biochemistry. 41 (35):10849-57.

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