Data Sheet (Cat.No.TMPY-02480)

TargetMol

Chymotrypsin C Protein, Human, Recombinant (His)

General Information

Synonyms:	ELA4;CLCR;chymotrypsin C (caldecrin)
Protein Construction:	A DNA sequence encoding the human CTRC (Q99895) (Met 1-Leu 268) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Cys 17
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q99895
Molecular Weight:	29.3 kDa (predicted); 36 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to cleave the fluorogenic peptide substrate, SUC-Ala-Ala-Pro-Phe-AMC. The specific activity is >300 pmol/min/μg. (Activation of this protease is needed prior to the use in activity assays)
Purity:	> 97 % 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 PBS, pH 7.4. 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

Chymotrypsin C (abbreviated for CTRC), also known as caldecrin or elastase4, is a digestive enzyme of the peptidase S1 family. This enzyme is synthesized as an inactivate chymotrypsinogen. On cleavage by trypsin into two parts that activate each other by removing two small peptides in a trans-proteolysis, chymotrypsin C produced. N-linked glycosylation of human CTRC is required for efficient folding and secretion, however, the N-

linked glycan is unimportant for enzyme activity or inhibitor binding. It has been proposed that CTRC is a key regulator of digestive zymogen activation and a physiological co-activator of digestive carboxypeptidases proCPA1 and proCPA2. Mutations that abolish activity or secretion of CTRC increase the risk for chronic pancreatitis. It's speculated that CTRC might regulate pancreatic cancer cell migration in relation to cytokeratin 18 expression. The pancreatic cancer cell migration ability was downregulated in pancreatic cancer Aspc-1 cells that overexpressed CTRC, whereas the cell migration ability was upregulated in Aspc-1 cells in which CTRC was suppressed.

Reference

Lacruz RS,et al. (2011) Chymotrypsin C (caldecrin) is associated with enamel development. J Dent Res. 90 (10): 1228-33.

Zhou J,et al. (2011) Chymotrypsin C mutations in chronic pancreatitis. J Gastroenterol Hepatol. 26 (8): 1238-46.

Wang H,et al. (2011) Effect of chymotrypsin C and related proteins on pancreatic cancer cell migration. Acta Biochim Biophys Sin (Shanghai). 43 (5): 362-71.