

# Human CTRC / chymotrypsin C Protein (His Tag)

Catalog Number: 11456-H08H



Sino Biological  
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## General Information

### Gene Name Synonym:

CLCR; ELA4

### Protein Construction:

A DNA sequence encoding the human CTRC (Q99895) (Met 1-Leu 268) was fused with a polyhistidine tag at the C-terminus.

**Source:** Human

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 97 % as determined by SDS-PAGE

### Bio 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)

### Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Cys 17

### Molecular Mass:

The secreted recombinant human CTRC (pro form) consists of 263 amino acids and has a predicted molecular mass of 29.3 kDa. It migrates as an approximately 36 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

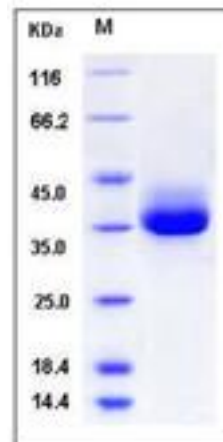
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

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 inactive 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.

## References

1. Lacruz RS, *et al.* (2011) Chymotrypsin C (caldecrin) is associated with enamel development. J Dent Res. 90 (10): 1228-33.
2. Zhou J, *et al.* (2011) Chymotrypsin C mutations in chronic pancreatitis. J Gastroenterol Hepatol. 26 (8): 1238-46.
3. 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.

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## Protocol

### rhCTRC activation

Activation Buffer: 50 mM Tris, 10 mM CaCl<sub>2</sub>, 150 mM NaCl, pH 7.5 (TCN)

1. Dilute rhCTRC to 200 µg/mL in Activation Buffer.
2. Dilute Trypsin to 0.4 µg/mL in Activation Buffer.
3. Combine equal volumes of 200 µg/mL rhCTRC and 0.4 µg/mL Trypsin.
4. Incubate at 37 °C for 1 hour.

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