

Human Cathepsin C / CTSC / DPPI Protein (His Tag)

Catalog Number: 10484-H08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CPPI; DPP-I; DPP1; DPPI; HMS; JP; JPD; PALS; PDON1; PLS

Protein Construction:

A DNA sequence encoding the pro form of human cathepsin C (NP_001805.3) (Met 1-Leu 463) was expressed with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 92 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to cleave the fluorogenic peptide substrate, Gly-Arg-7-amido-4-methylcoumarin (GRAMC). The specific activity is >200 pmoles/min/μg. (Activation description: The proenzyme needs to be activated by Cathepsin L for an activated form)

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: Asp 25

Molecular Mass:

The secreted recombinant human cathepsin C exists as the pro form after removal of the signal peptide. It consists of 450 amino acids and has a predicted molecular mass of 51 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rhCTSC is approximately 55 kDa.

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:

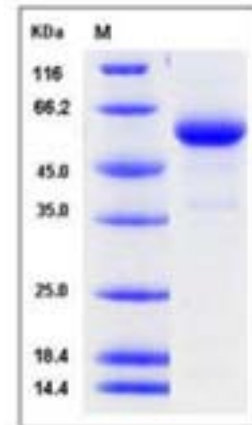
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Cathepsins are proteases found in many types of cells conserved in all animals, which have a vital role in mammalian cellular turnover such as bone resorption. The lysosomal cysteine protease Cathepsin C (CTSC), also known as dipeptidyl peptidase I (DPPI/DPP1), activates a number of granule-associated serine proteases with pro-inflammatory and immune functions by removal of their inhibitory N-terminal dipeptides. This lysosomal exo-cysteine protease belonging to the peptidase C1 family. Active cathepsin C is found in lysosomes as a 200-kDa multimeric enzyme. Subunits constituting this assembly all arise from the proteolytic cleavage of a single precursor giving rise to three peptides: the propeptide, the alpha- and the beta-chains. It is a central coordinator for activation of many serine proteases in immune/inflammatory cells. Defects in the Cathepsin C have been shown to be a cause of Papillon-Lefevre disease, an autosomal recessive disorder characterized by palmoplantar keratosis and periodontitis. Cathepsin C plays a key role in the activation of several degradative enzymes linked to tissue destruction in inflammatory diseases. Thus, it is a therapeutic target for the treatment of a number of inflammatory and autoimmune diseases.

References

- 1.Santilman V, *et al.* (2002) Importance of the propeptide in the biosynthetic maturation of rat cathepsin C. *Eur J Cell Biol.* 81(12): 654-63.
- 2.Kam CM, *et al.* (2004) Design and evaluation of inhibitors for dipeptidyl peptidase I (Cathepsin C). *Arch Biochem Biophys.* 427(2): 123-34.
- 3.Noack B, *et al.* (2008) Cathepsin C gene variants in aggressive periodontitis. *J Dent Res.* 87(10): 958-63.

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