



# Recombinant Protein Technical Manual

**Recombinant Human Cathepsin C/CTSC/DPPI  
Protein (His Tag)(Active)  
RPES2700**

## Product Data:

**Product SKU:** RPES2700

**Size:** 10µg

**Species:** Human

**Expression host:** HEK293 Cells

**Uniprot:** NP\_001805.3

## Protein Information:

**Molecular Mass:** 51 kDa

**AP Molecular Mass:** 55 kDa

**Tag:** C-His

**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)

**Purity:** > 92 % as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per µg as determined by the LAL method.

**Storage:** Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from sterile PBS, pH 7.4

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

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

## Immunogen Information:

**Sequence:** Met 1-Leu 463

## Background:

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.