



# Recombinant Protein Technical Manual

**Recombinant Human Cathepsin Z Protein (His Tag)(Active)**  
RPES1271

## Product Data:

**Product SKU:** RPES1271

**Size:** 10µg

**Species:** Human

**Expression host:** HEK293 Cells

**Uniprot:** Q9UBR2

## Protein Information:

**Molecular Mass:** 33 kDa

**AP Molecular Mass:**

**Tag:** C-His

**Bio-activity:** Measured by its ability to cleave the fluorogenic peptide substrate, Mca-RPPGFSAFK (Dnp)-OH, R&D Systems, Catalog # ES005. The specific activity is >800 pmoles/min/µg.

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

**Endotoxin:** < 1.0 EU per µg of the protein 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:** Cathepsin Z; Cathepsin P; Cathepsin X; CTSZ

## Immunogen Information:

**Sequence:** Met 1-Val 303

## Background:

Cathepsin Z (CTSZ), also known as Cathepsin X or CATX, belongs to the C1 family of lysosomal cysteine proteases. Its gene structure and activity properties show several unique features that distinguish it clearly from other human cysteine proteases. It has a very short pro-region that shows no similarity to those of other cathepsins and a three-residue insertion motif that forms a characteristic 'mini loop'. Cathepsin Z exhibits mono- and di-peptidase activity at its C-terminus, and in contrast to cathepsin B, it does not act as an endopeptidase. It is restricted to the cells of the immune system, predominantly monocytes, macrophages and dendritic cells. Cathepsin Z is widely expressed in human tissues, suggesting that this enzyme could be involved in the normal intracellular protein degradation taking place in all cell types. It is capable to cleave regulatory motifs at C-terminus affecting the function of targeted molecules. Cathepsin X may regulate also the maturation of dendritic cells, a process, which is crucial in the initiation of adaptive immunity. Furthermore, higher levels of Cathepsin Z are also found in tumour and immune cells of prostate and gastric carcinomas and in macrophages of gastric mucosa, especially after infection by *Helicobacter pylori*. Cathepsin Z is also ubiquitously distributed in cancer cell lines and in primary tumors from different sources, suggesting that this enzyme may participate in tumor progression.