Mouse CTSZ / CTSX / Cathepsin Z Protein (His Tag)

Catalog Number: **50089-M08H**

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

AI787083; AU019819; CTSX; D2Wsu143e

Protein Construction:

A DNA sequence encoding the mouse CTSZ (NP_071720.1) precursor (Met 1-Val 306) was expressed with a polyhistidine tag at the C-terminus.

Source: Mouse

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

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 >1,200 pmoles/min/µg.

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 ℃

Predicted N terminal: Ala 23

Molecular Mass:

The secreted recombinant mouse CTSD pro form consists of 295 amino acids and has a predicted molecular mass of 33.2 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rmCTSD is approximately 38 kDa due to glycosylation.

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:

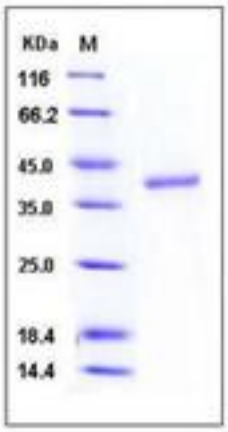
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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 theimmune 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 inmacrophages 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.

References

1.Santamara I, *et al.* (1998) Cathepsin Z, a novel human cysteine proteinase with a short propeptide domain and a unique chromosomal location. J Biol Chem. 273(27): 16816-23. 2.Kos J, *et al.* (2009) The role of cathepsin X in cell signaling. Cell Adh Migr. 3(2): 164-6. 3.Sevenich L, *et al.* (2010) Synergistic antitumor effects of combined cathepsin B and cathepsin Z deficiencies on breast cancer progression and metastasis in mice. Proc Natl Acad Sci U S A. 107(6): 2497-502.