# Mouse Cathepsin A / CTSA Protein (His Tag)

**Catalog Number:** **50348-M08H**

## General Information

**Gene Name Synonym:**

AU019505; PPCA; Ppgb

**Protein Construction:**

A DNA sequence encoding the mouse CTSA (P16675-1) (Met 1-Tyr 474) was expressed, with a C-terminal polyhistidine tag.

**Source:** Mouse

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 96 % as determined by SDS-PAGE

**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 24

**Molecular Mass:**

The secreted recombinant mouse CTSA consists of 462 amino acids and has a calculated molecular mass of 52.8 kDa as estimated in SDS-PAGE under reducing conditions.

**Formulation:**

Lyophilized from sterile 25mM Tris, 0.3M NaCl, pH 8.0

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:**

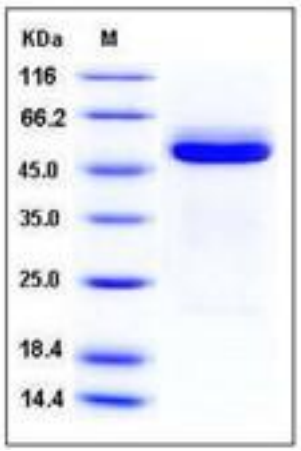
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

**Reconstitution:**

Detailed reconstitution instructions are sent along with the products.

**SDS-PAGE:**




## Protein Description

Lysosomal carboxypeptidase, cathepsin A (protective protein, CathA), is a component of the lysosomal multienzyme complex along with beta-galactosidase (GAL) and sialidase Neu1, where it activates Neu1 and protects GAL and Neu1 against the rapid proteolytic degradation. Cathepsin A is a multicatalytic enzyme with deamidase and esterase in addition to carboxypeptidase activities. It was recently identified in human platelets as deamidase. In vitro, it hydrolyzes a variety of bioactive peptide hormones including tachykinins, suggesting that extralysosomal cathepsin A plays a role in regulation of bioactive peptide functions. It is a member of the alpha/beta hydrolase fold family and has been suggested to share a common ancestral relationship with other alpha/beta hydrolase fold enzymes, such as cholinesterases. Cathepsin A defects are linked to multiple forms of Galactosialidosis with a combined secondary deficiency of beta-galactosidase and neuraminidase. Cathepsin A is a key molecule in the onset of galactosialidosis and also highlight the therapeutic acts in vivo as an endothelin-1-inactivating enzyme and strongly confirm a crucial role of this enzyme in effective elastic fiber formation.

### References

1.Hiraiwa M. (1999) Cathepsin A/protective protein: an unusual lysosomal multifunctional protein. Cell Mol Life Sci. 56(11-12): 894-907. 2.Yoshida T, *et al.* (2006) Comparative analysis of binding energy of chymostatin with human cathepsin A and its homologous proteins by molecular orbital calculation. J Chem Inf Model. 46(5): 2093-103. 3.Seyrantepe V, *et al.* (2008) Enzymatic activity of lysosomal carboxypeptidase (cathepsin) A is required for proper elastic fiber formation and inactivation of endothelin-1. Circulation. 117(15): 1973-81.