Human Cathepsin A / CTSA Protein (His Tag)

Catalog Number: **10482-H08H**

General Information

Gene Name Synonym:

GLB2; GSL; NGBE; PPCA; PPGB

Protein Construction:

A DNA sequence encoding the human cathepsin A isoform b (Met 1-Tyr 480) (NP_001121167.1) was expressed with a N-terminal signal peptide and a C-terminal polyhistidine tag.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 90 % 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 29

Molecular Mass:

The secreted recombinant human CTSA existing as a single-chain form consists of 463 amino acids and has a predicted molecular mass of 53 kDa as estimated by SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 25mM Tris, 0.15mM NaCl, pH 7.5

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:

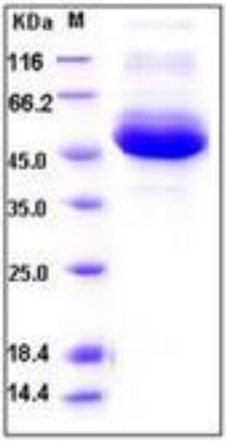
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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.