



Cysteine Protease Cathepsin S

Product Data Sheet

For Research Use Only, Not for use in diagnostic procedures

## Cysteine Protease Cathepsin S

Human, recombinant protein expressed in HEK 293 cell, Active

Cat# CY-E1250

Amount: 10 $\mu$ g (0.1  $\mu$ g/ $\mu$ l)

Lot:

Specific Activity: >40 units/mg

### Introduction:

Cathepsin S is a cysteine protease found in the lysosome of lymphatic cells. It is a member of the papain superfamily and has 57% identity to cathepsins L and K. Unlike most other lysosomal proteases that are only active under acidic conditions, the activity of cathepsin S exhibits a broad pH optimum that extends to alkaline pH. Cathepsin S is expressed mainly in dendritic cells, B cells, and macrophages, where cathepsin S acts as a key enzyme in major histocompatibility complex class II mediated antigen presentation (1, 2).

Cathepsin S is upregulated by IFN $\gamma$  through the IFN stimulated response element in the cathepsin S promoter. This enzyme is also implicated in the pathogenesis of several diseases such as rheumatoid arthritis, multiple sclerosis (3, 4), atherosclerosis (5-7), cancer (8, 9), Alzheimer's and Down's Syndrome (10). It is an attractive target for drug discovery due to its involvement in immune system function as well as extracellular matrix breakdown.

### Product Description:

Human Cathepsin S containing an C-terminal His-tag, expressed in HEK293 cells and purified by nickel chelating agarose chromatography.

### Gene Information:

The gene accession number is NM\_004079.

### OMIM No.:

116845

### Gene Aliases:

CTSS

### Formulation:

Recombinant Cathepsin S is supplied frozen in a buffer containing 50 mM potassium phosphate, pH 6.5, 5 mM DTT, 0.5 mM EDTA, and 100 mM NaCl and 50% glycerol. Use a same buffer for dilution when needed.



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#### Molecular Weight: 38 kDa

Mw (kDa)

97 —

66 —

45 —

31 —

Recombinant Cathepsin S demonstrates approximately ~38 kDa band by SDS-PAGE analysis.

Coomassie blue stain

#### Storage:

Store product at -70°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, AVOID REPEATED HANDLING AND MULTIPLE FREEZE/THAW CYCLES.

#### Stability:

Unopened vial at -70 °C, for 1 year after delivery.

#### Unit Definitions:

One unit is defined as the amount of Cathepsin S required to hydrolyze 1 μmol of Z-Val-Val-Arg-MCA per minute at 30°C. Specific Activity varies among production lots.

#### References:

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3. S.N. Desai et al. Eur. J. Pharmacol. 538: 168, 2006
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6. Aikawa, E. et al. Circulation, April 7, 2009; 119(13): 1785
7. de Nooijer, R. et al. Arterioscler. Thromb. Vasc. Biol. 29: 188, 2009
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9. Flannery, T. et al. Int. J. Cancer. 119: 854, 2006
10. Cynthia, A. et al. Am. J. Pathol. 146: 848, 1995

#### Related Products:

\* CycLex Cathepsin S Fluorometric Assay Kit: Cat# CY-1250



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