

Procathepsin S, human recombinant

CATALOG #: 7525-10 10 µg
 7525-50 50 µg
 7525-500 500 µg

SOURCE: *E. coli*

ALTERNATIVE NAMES: CTSS

FORM: Lyophilized

FORMULATION: Lyophilized from proprietary buffer.

PURITY: ≥90% by SDS-PAGE.

MOL. WT.: 38.1 kDa (17-331 aa + N-terminal poly-his tag)

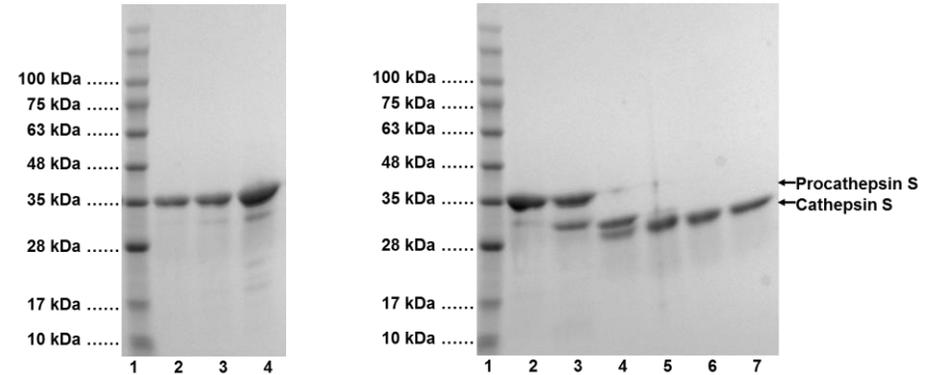
STORAGE CONDITIONS: Stable for at least 1 year as supplied. Briefly spin down the vial and reconstitute in 25 mM Na₂HPO₄, 500 mM NaCl (pH 7.0) to 0.5-1 mg/ml and store at -80°C. Avoid repeated freeze and thaw cycles.

BACKGROUND: Cathepsin S (CTSS) is a lysosomal cysteine protease of the papain family and may participate in the degradation of antigenic proteins to peptides for presentation on MHC class II molecules. CTSS is synthesized as inactive precursor of 331 amino acids consisting of a 15-aa signal peptide, a propeptide of 99 aa, and a mature polypeptide of 217 aa. It is activated in the lysosomes by a proteolytic cleavage of the propeptide. The deduced amino acid sequence contains only one potential N-glycosylation site located in the propeptide. Compared with the abundant cathepsins B, L and H, cathepsin S shows a restricted tissue distribution, with highest levels in spleen, heart, and lung. In addition, evidences indicate that cathepsin S generates amyloid beta-peptide from amyloidogenic fragments of amyloid precursor protein (APP) in the endosomal/lysosomal compartment, and is implicated in the pathogenesis of Alzheimer's disease and Down Syndrome.

ACTIVITY ASSAY: Biovision's Procathepsin S can be auto-catalytically activated to mature Cathepsin S (~24 kDa) by adding an equal volume of 0.2 M NaOAc, 5 mM EDTA pH 4.0 containing fresh 5 mM DTT at room temperature (RT). The enzyme is fully activated within 2-3 hrs. of incubation at RT. After activation mature Cathepsin S is highly auto-proteolytic and care must be taken to avoid self-proteolysis.

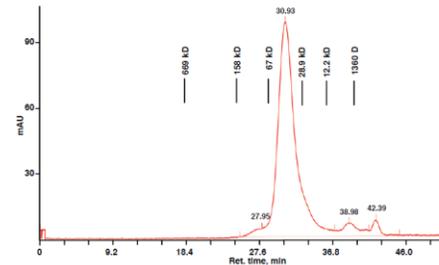
APPLICATIONS: Active human Cathepsin S is useful in inhibitor screening, and kinetic studies of substrates *in vitro* or in tissue culture.

SPECIFIC ACTIVITY: >1000 mU/mg (1 U = Digestion of 1 µmole/min) of Ac-VVR-AFC substrate (K144-100) after full activation.

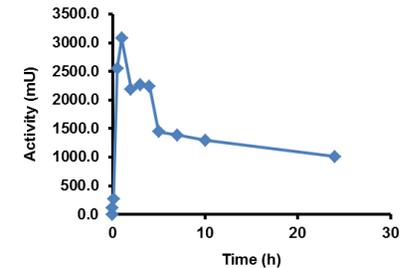


SDS-PAGE (4-20%) of h-Procathepsin S:
 1: Protein Marker
 2: h-Procathepsin S (5 µg)
 3: h-Procathepsin S (10 µg)
 4: h-Procathepsin S (20 µg)

SDS-PAGE (4-20%) of Activation of h-Procathepsin S:
 1: Protein Marker
 2: h-Procathepsin S (10 µg)
 3-7: h-Procathepsin S (10 µg) after 1, 30, 60, 120 and 180 min of activation



SEC analysis of h-Procathepsin S using a Superdex 200 HR 10/30 column at 0.5 ml/min in 50 mM Tris and 0.25 M NaCl pH 7.5.



Activation of h-Procathepsin S as measured by Cathepsin S Activity Assay Kit (K144-100).

RELATED PRODUCTS:

- Active Cathepsin S Human Recombinant (Cat. No. 7526-10, -50, -500)
- Procathepsin B, human recombinant (Cat. No. 7579-10, -50, -1000)
- Cathepsin B, Active, human recombinant (Cat. No. 7580-5, -50, -1000)
- Procathepsin L, human recombinant (Cat. No. 7581-5, -100, -1000)
- Cathepsin K, Active, human recombinant (Cat. No. 7600-5, -50)
- Cathepsin B (active, human) (Cat. No. 1021-5)

For Research Use Only! Not to be used in humans.