Data Sheet (Cat.No.TMPY-01249)

TargetMol

Cathepsin V Protein, Human, Recombinant (His)

General Information

Synonyms:	CTSV;cathepsin V;MGC125957;CATL2;CTSU;CTSL2
Protein Construction:	A DNA sequence encoding the full length of human cathepsin L2 (NP_001324.2) (Met 1-Val 334) was expressed, with a C-terminal polyhistidine tag. Predicted N terminal: Val 18
Species:	Human
Expression Host:	HEK293 Cells
Accession:	O60911
Molecular Weight:	37.1 kDa (predicted); 40 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to cleave the fluorogenic peptide substrate Z-LR-AMC. The specific activity is >1000 pmoles/min/μg.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 25 mM MES, 25 mM NaCl, pH 6. 5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Cathepsin V (CTSV), also known as Cathepsin L2, CTSL2, and CATL2, is a member of the peptidase C1 family. It is predominantly expressed in the thymus and testis. Cathepsin V is also expressed in corneal epithelium, and to a lesser extent in conjuctival epithelium and skin. It is a lysosomal cysteine proteinase that may play an important role in corneal physiology. It has about 75% protein sequence identity to murine cathepsin L. The fold of this enzyme is similar to the fold adopted by other members of the papain superfamily of cysteine proteases.

Cathepsin V has been recently described as highly homologous to Cathepsin L and exclusively expressed in human thymus and testis. Cathepsin V is the dominant cysteine protease in cortical human thymic epithelial cells, while Cathepsin L and Cathepsin S seem to be restricted to dendritic and macrophage-like cells. Active Cathepsin V in thymic lysosomal preparations was demonstrated by active-site labeling. Recombinant Cathepsin V was capable of converting Ii into CLIP efficiently, suggesting that it is the protease that controls the generation of alphabeta-CLIP complexes in the human thymus. Cathepsin V is the third elastolytic cysteine protease which exhibits the most potent elastase activity yet described among human proteases and that it is present in atherosclerotic plaque specimens. Cathepsin L2 may play a specialized role in the thymus and testis. Expression analysis of cathepsin L2 in human tumors revealed a widespread expression in colorectal and breast carcinomas but not in normal colon or mammary gland or in peritumoral tissues. Cathepsin L2 was also expressed by colorectal and breast cancer cell lines as well as by some tumors of diverse origin, including ovarian and renal carcinomas.

Reference

Itoh R, et al. (1999) Genomic organization and chromosomal localization of the human cathepsin L2 gene. DNA Res. 6(2): 137-40.

Tolosa E, et al. (2003) Cathepsin V is involved in the degradation of invariant chain in human thymus and is overexpressed in myasthenia gravis. J Clin Invest. 112(4): 517-26.

Yasuda Y, et al. (2004) Cathepsin V, a novel and potent elastolytic activity expressed in activated macrophages. J Biol Chem. 279(35): 36761-70.

Puzer L, et al. (2008) Cathepsin V, but not cathepsins L, B and K, may release angiostatin-like fragments from plasminogen. Biol Chem. 389(2): 195-200.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481