APD993Mu01 100μg
Active Cathepsin G (CTSG)
Organism Species: *Mus musculus (Mouse)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Ile21~Thr261
Tags: N-terminal His and GST Tag
Purity: >80%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% Sarcosyl, 5%Trehalose .
Original Concentration: 100μg/mL
Applications: Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 10.8
Predicted Molecular Mass: 56.9kDa
Accurate Molecular Mass: 57kDa as determined by SDS-PAGE reducing conditions.

[USAGE]

Reconstitute in ddH_2O to a concentration of 0.1-0.5 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.
Store at 2-8°C for one month.
Aliquot and store at -80°C for 12 months.
Stability Test: The thermal stability is described by the loss rate. The loss rate

was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

IIGGREARPH SYPYMAFLLI QSPEGLSACG
GFLVREDFVL TAAHCLGSSI NVTLGAHNIQ MRERTQQLIT VLRAIRHPDY
NPQNIRNDIM LLQLRRRARR SGSVKPVALP QASKKLQPGD LCTVAGWGRV
SQSRGTNVLQ EVQLRVQMDQ MCANRFQFYN SQTQICVGNP RERKSAFRGD
SGGPLVCSNV AQGIVSYGSN NGNPPAVFTK IQSFMPWIKR TMRRFAPRYQ
RPANSLSQAQ T

[ACTIVITY]

Cathepsin G (CTSG, D993Mu) is a 26 kDa serine protease of the peptidase S1 (chymotrypsin) family, primarily stored in the azurophil granules of neutrophilic polymorphonuclear leukocytes. Encoded by the CTSG gene on chromosome 14q11.2, it is synthesized as a preproprotein and proteolytically processed to yield the active mature enzyme. As a key immune effector, CTSG participates in phagocytic pathogen killing and digestion, mediates connective tissue remodeling at inflammatory loci, and exerts direct antimicrobial activity against pathogens like Staphylococcus aureus. Beyond innate immunity, it modulates immune signaling, tissue repair, and pathological processes including tumor invasion and chronic inflammation. Functionally, CTSG directly cleaves and activates the latent proenzyme form of MMP9 (A553Ca), converting pro-MMP9 into its catalytically active matrix metalloproteinase.Thus a functional ELISA assay was conducted to detect the interaction of recombinant mouse CTSG and recombinant dog MMP9. Briefly, CTSG was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to MMP9-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-CTSG pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5

times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 μL stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant mouse CTSG and recombinant dog MMP9 was shown in Figure 1, the EC50 for this effect is 0.017 μg/mL.

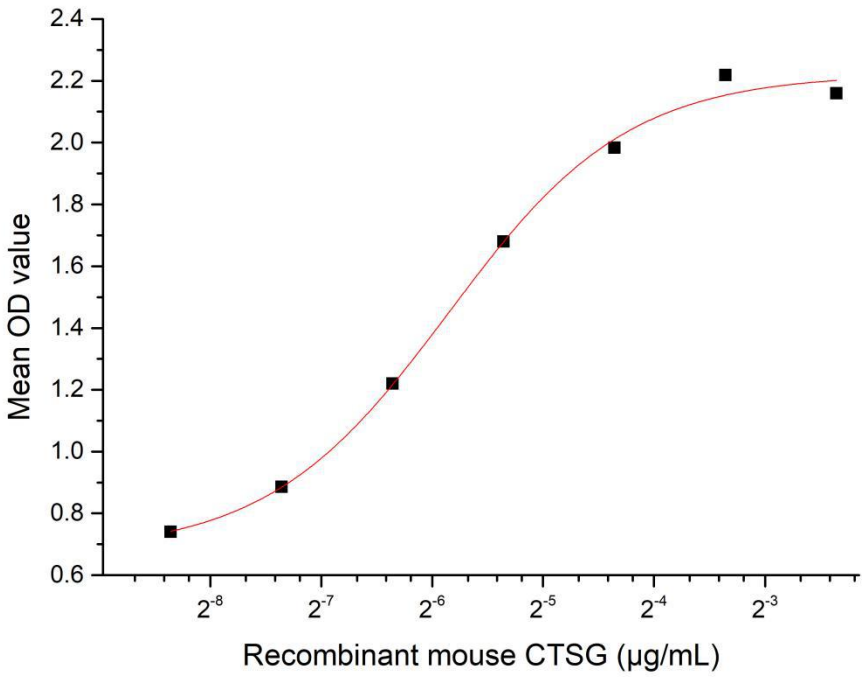

Figure 1. The binding activity of recombinant mouse CTSG and dog MMP9

[IDENTIFICATION]

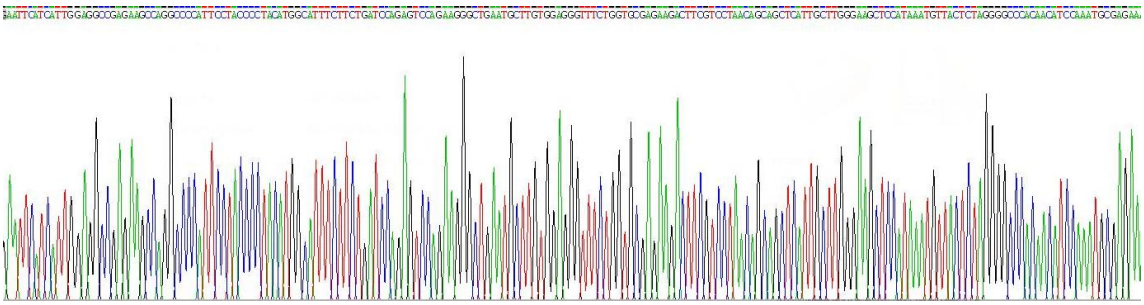

Figure 2. Gene Sequencing (extract)

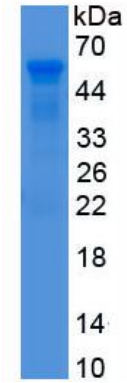

Figure 3. SDS-PAGE

Sample: Active recombinant CTSG, Mouse

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.