# Active Cystatin 5 (CST5)

*Catalog#:PEH12979*

## 概述（Summary）

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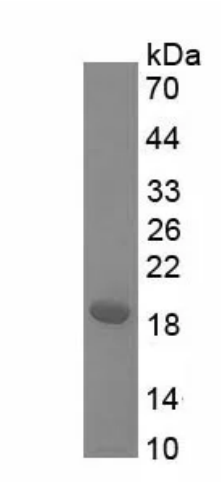
|---|---|
| **别称（Alternative Names）** | Cystatin D |
| **纯度（Purity）** | Greater than 95% as determined by reducing SDS-PAGE. |
| **内毒素（Endotoxin level）** | Please contact with the lab for this information |
| **蛋白构建（Construction）** | 【Gly21-Val142】 |
| **Accession #** | P28325 |
| **表达宿主（Host）** | E.coli |
| **种属（Species）** | Homo sapiens (Human) |
| **预测分子量（Predicted MW）** | 17.5 kDa |
| **制剂（Form）** | Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300. |
| **运输方式（Shipping）** | The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below. |
| **稳定性&储存（Stability &Storage）** | 12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles. |
| **复溶（Reconstitution）** | Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex. |
| **背景介绍（References）** | Cysteine proteinase inhibitor that possibly plays a protective role against proteinases present in the oral cavity. The order of preference for inhibition is cathepsin S > cathepsin H > cathepsin L > cathepsin B. |

## 电泳图（SDS-PAGE image）




Greater than 95% as determined by reducing SDS-PAGE.

## 活性图（Bioactivity image）

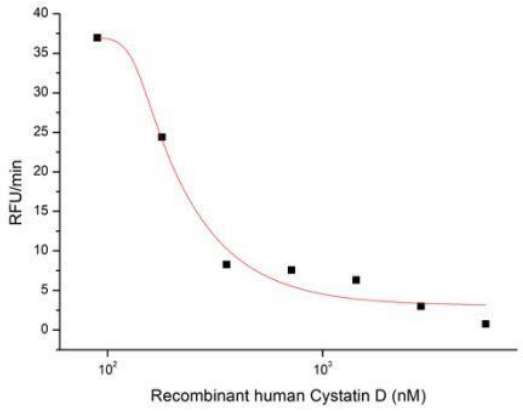



Figure 1. Inhibition of papain activity by recombinant human Cystatin D

Cystatin D is a member of family 2 of the cystatin superfamily. In contrast to other members of family 2, Cystatin D has restricted tissue distribution and has been found only in saliva and tears. Two allelic variants (Arg46 and Cys46) are known in the human protein and they are not significantly different in their inhibitory activity against papain and cathepsins B, H, L and S. Recombinant Human Cystatin D corresponds to the Arg46 variant. The functions of Cystatin D are largely unknown. However, Cystatin D has been shown to inhibit coronavirus replication at its physiological concentration (0.12 1.9 µM) and has been suggested to play a protective role against proteases present in the oral cavity. The activity of recombinant human Cystatin D was measured by its ability to inhibit papain cleavage of a fluorogenic peptide substrate Z-FR-AMC in the assay buffer 50 mM Tris, pH 7.0. Papain was diluted to 500 ug/ml in activation buffer 50 mM Tris, 5 mM DTT, pH 7.0 and incubated at room temperature for 15 minutes. The activated papain was diluted to 100 ug/ml in the assay buffer and 20 ul different concentrations of recombinant human Cystatin D (MW: 17.45 KD) was incubated with 20 ul 100 ug/ml papain at 37 ℃ for 10 minutes. Loading 50 µL of the incubated mixtures which were diluted five-fold in assay buffer into empty wells of a plate, and start the reaction by adding 50 µL of 200 µM substrate. Include a substrate blank containing 50 µL of assay buffer and 50 µL of 200 µM substrate. Then read at excitiation and emission wavelengths of 380 nm and 460 nm, respectively, in kinetic mode for 5 minutes. The result was shown in Figure 1 and it was obvious that recombinant human Cystatin D significantly decreased papain activity. The inhibition IC50 was <200 nM.

## 注意事项（Note）

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