# Human Cathepsin D Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1014

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human Cathepsin D in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant mouse (rm) Cathepsin D is observed. |
| **Source** | Polyclonal Goat IgG |
| **Purification** | Antigen Affinity-purified |
| **Immunogen** | Mouse myeloma cell line NS0-derived recombinant human Cathepsin D<br>Leu21-Leu412<br>Accession # P07339 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS. |

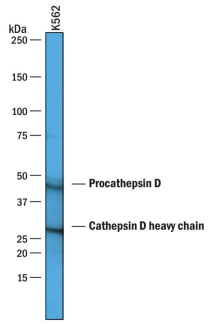
## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Western Blot** | 1 µg/mL | See Below |
| **Immunohistochemistry** | 5-15 µg/mL | See Below |
| **Immunoprecipitation** | 25 µg/mL | Conditioned cell culture medium spiked with Recombinant Human Cathepsin D (Catalog # 1014-AS), see our available Western blot detection antibodies |
| **Simple Western** | 50 µg/mL | See Below |

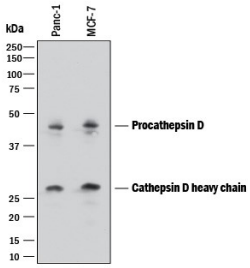
## DATA

### Western Blot



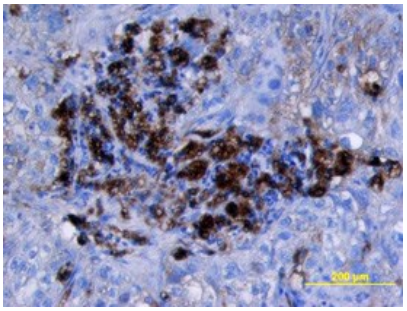

**Detection of Human Cathepsin D by Western Blot.** Western blot shows lysates of K562 human chronic myelogenous leukemia cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Cathepsin D Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1014) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). Specific bands were detected for Procathepsin D at approximately 45 kDa and Cathepsin D heavy chain 28 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

### Western Blot



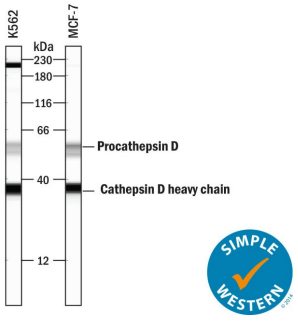

**Detection of Human Cathepsin D by Western Blot.** Western blot shows lysates of PANC-1 human pancreatic carcinoma cell line and MCF-7 human breast cancer cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Cathepsin D Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1014) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). Specific bands were detected for Procathepsin D at approximately 45 kDa and Cathepsin D heavy chain 28 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

### Immunohistochemistry



**Cathepsin D in Human Lung Cancer Tissue.** Cathepsin D was detected in immersion fixed paraffin-embedded sections of human lung cancer tissue using Goat Anti-Human Cathepsin D Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1014) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

### Simple Western




**Detection of Human Cathepsin D by Simple Western™.** Simple Western lane view shows lysates of K562 human chronic myelogenous leukemia cell line and MCF-7 human breast cancer cell line, loaded at 0.2 mg/mL. Specific bands were detected for Procathepsin D at approximately 55 kDa and Cathepsin D heavy chain at approximately 37 kDa (as indicated) using 50 µg/mL of Goat Anti-Human Cathepsin D Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1014) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system. Non-specific interaction with the 230 kDa Simple Western standard may be seen with this antibody.



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# Human Cathepsin D Antibody

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Catalog Number: AF1014

## PREPARATION AND STORAGE

| | |
|---|---|
| **Reconstitution** | Reconstitute at 0.2 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 6 months, -20 to -70 °C under sterile conditions after reconstitution. |

## BACKGROUND

Cathepsin D is a lysosomal aspartic protease of the pepsin family (1). Human cathepsin D is synthesized as a precursor protein, consisting of a signal peptide (residues 1-18), a propeptide (residues 19-64), and a mature chain (residues 65-412) (2-4). The mature chain can be processed further to the light (residues 65-161) and heavy (residues 169-412) chains. It is expressed in most cells and overexpressed in breast cancer cells (5). It is a major enzyme in protein degradation in lysosomes, and also involved in the presentation of antigenic peptides. Mice deficient in this enzyme showed a progressive atrophy of the intestinal mucosa, a massive destruction of lymphoid organs, and a profound neuronal ceroid lipofucinosis, indicating that cathepsin D is essential for proteolysis of proteins regulating cell growth and tissue homeostasis (6). Cathepsin D secreted from human prostate carcinoma cells are responsible for the generation of angiostatin, a potent endogeneous inhibitor of angiogenesis (6).

**References:**


1. Conner *et al.* in *Handbook of Proteolytic Enzymes* Barrett (1998) Academic Press, San Diego, p. 828.
2. Faust, *et al.* (1985) Proc. Natl. Acad. Sci. USA **82:**4910.
3. Westley and May (1987) Nucl. Acid Res. **15:**3773.
4. Redecker, *et al.* (1991) DNA Cell Biol. **10:**423.
5. Rochefort, *et al.* (2000) Clin. Chim. Acta. **291**:157.
6. Tsukuba, *et al.* (2000) Mol. Cells **10**:601.




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