Human Cathepsin B Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF953

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Cathepsin B in direct ELISAs and Western blots. In direct ELISAs, approximately 35% cross-reactivity with recombinant mouse (rm) Cathepsin B is observed and less than 5% cross-reactivity with recombinant human (rh) Cathepsin C, rmCathepsin H, and rhCathepsin L is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Cathepsin B Arg18-Ile339 Accession # P07858
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

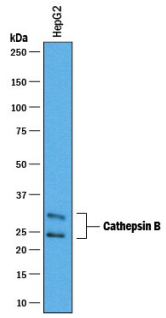
APPLICATIONS

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	0.25 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human Cathepsin B (Catalog # 953-CY), see our available Western blot detection antibodies
Simple Western	2.5 µg/mL	See Below

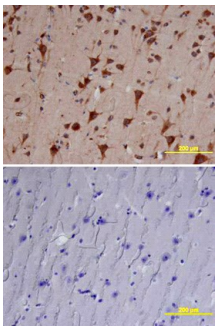
DATA

Western Blot



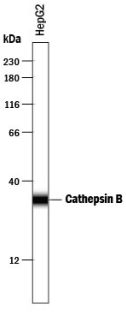
Detection of Human Cathepsin B by Western Blot. Western blot shows lysates of HepG2 human hepatocellular carcinoma cell line. PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Human Cathepsin B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF953) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Cathepsin B at approximately 25-30 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



Cathepsin B in Human Brain. Cathepsin B was detected in immersion fixed paraffin-embedded sections of human brain (cortex) using Goat Anti-Human Cathepsin B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF953) at 10 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). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Simple Western



Detection of Human Cathepsin B by Simple Western™. Simple Western lane view shows lysates of HepG2 human hepatocellular carcinoma cell line, loaded at 0.2 mg/mL. A specific band was detected for Cathepsin B at approximately 34 kDa (as indicated) using 2.5 µg/mL of Goat Anti-Human Cathepsin B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF953) 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.

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. *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.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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BACKGROUND

Cathepsin B is the first described member of the family of lysosomal cysteine proteases (1). Cathepsin B possesses both endopeptidase and exopeptidase activities, in the latter case acting as a peptidyl-dipeptidase. It is known to process a number of proteins, including pro and active caspases, prorenin, and secretory leucoprotease inhibitor (SLPI) (2-4). Therefore, Cathepsin B may play a role in activation and inactivation of caspases, activation of renin and inactivation of SLPI, the key steps in apoptosis, angiotensin production, and progression of emphysema, respectively. Because of its increased levels and redistribution of the enzyme in human and animal tumors, Cathepsin B may also have role in invasion and metastasis (5).

In addition to lysosome, Cathepsin B can be secreted or associated with plasma membrane, cytoplasm, and nucleus. It is synthesized as a preproenzyme. Following removal of the signal peptide, the inactive proenzyme undergoes further modifications including removal of the pro region to result in the active enzyme (1).

References:

1. Mort, J.S. (2004) in *Handbook of Proteolytic Enzymes*. Barrett, A.J. *et al*. (eds): Academic Press, San Diego, p. 1079.
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3. Jutras, I. and T.L. Reudelhuber (1999) FEBS Lett. **443**:48.
4. Taggart, C.C. *et al*. (2001) J. Biol. Chem. **276**:33345.
5. Bergquin, I.M. and B.F. Sloane (1996) Adv. Exp. Med. Biol. **389**:281.

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bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956