

## Anti-Cathepsin B [2A2] Bulk Size Ab04088-10.0-BT

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**Isotype and Format:** Human IgG1, Kappa

**Clone Number:** 2A2

**Alternative Name(s) of Target:** Cat B; CTSB; CPSB; APPS; APP secretase; Cathepsin B1

**UniProt Accession Number of Target Protein:** P07858

**Published Application(s):** inhibit, WB, ELISA

**Published Species Reactivity:** Human

**Immunogen:** The original antibody was generated by immunizing BALB/c mice with highly purified recombinant human cathepsin B expressed in E. coli.

**Specificity:** This antibody binds human cathepsin B (Cat B) at an epitope near the active site and inhibits its proteolytic activity. It was reported to specifically bind the 'EPGYSP' sequence located between amino acid residues 133-138 of cathepsin B. Cat B is a lysosomal cysteine protease that is shown to participate in processes of tumor growth, invasion, and metastasis. It is seen that the increased level of tumor cathepsin B is not balanced by an increase in cysteine proteases, leading to uncontrolled proteolysis in the extracellular matrix. Significantly increased levels of Cat B have also been found in sera of patients with breast, colorectal, liver, pancreatic, and melanoma cancers.

**Application Notes:** This antibody is capable of binding cathepsin B in an antigen-immobilized ELISA. The binding reactivity of this antibody to cathepsin B was also confirmed using Western blot. This antibody significantly inhibited the invasion of ras-transformed MCF-10A neoT cells through matrigel. This antibody was further reported to inhibit cathepsin B activity against BODYPY FL casein significantly (Fan et al., 2002; PMID: 12530548). In a study, the intracellular and extracellular cathepsin B activities in the invasion of ras-transformed human breast epithelial cells, MCF-10A neoT, were assessed using this antibody. This antibody was shown to impair both the intracellular and the extracellular fractions of cathepsin B activity (Premzl et al., 2003; PMID: 12581740). This antibody was also used in the generation of an ammodytotoxin-anti-cathepsin B immuno-conjugate to deliver secretory phospholipase A2 into cancerous cells (Premzl et al., 2008; PMID: 18221975). This antibody was reported to potentiate cathepsin B exopeptidase activity with an activation constant ( $K_a$ ) of 22.3 nM, although simultaneously inhibiting its endopeptidase activity (Mirković et al., 2009; PMID: 19656187).

**Antibody First Published in:** Fan et al. Molecular cloning and chimerisation of an inhibitory anti-cathepsin B antibody and its expression in Chinese hamster ovary cells. Biol Chem. 2002 Nov;383(11):1817-20. [PMID:12530548](#)

**Note on publication:** The original article describes the cloning and generation of a chimeric antibody against cathepsin B in CHO cells.

## Product Form

**Size:** 1 mg Purified antibody in bulk size.

**Purification:**

Protein A affinity purified

**Supplied In:** PBS only.

**Storage Recommendation:** Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20°C.

**Concentration:** 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.