

## Anti-Cathepsin B [2A2] Bulk Size Ab04088-10.3-BT

This antibody was created using our proprietary Fc Silent™ engineered Fc domain containing key point mutations that abrogate binding to Fc gamma receptors.

This is a reformatted human IgG1 Fc Silent Fc Silent™ antibody, based on the original human IgG1 format, created for improved compatibility with existing reagents, assays and techniques.

**Isotype and Format:** Human IgG1, Fc Silent™, 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.