Qty: 100 µg/200 µL

Mouse anti-Cathepsin B

Catalog No. 414800

Lot No.

Mouse Anti-Cathepsin B

FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 4B11 **Isotype**: IgG1

IMMUNOGEN

Recombinant human pro-cathepsin B protein (accession # P07858, NP_001899), which is 98% homologous with Bornean orangutan, 97% rhesus monkey and rat, 84% canine, 83% bovine, and 81% swine.

SPECIFICITY

This antibody is specific for the cathepsin B (cahtepsin B1, APP secretase, APPS) protein. On Western Blots using human recombinant pro-cathepsin B, it identifies the target band at ~43 kDa. In case of mature cathepsin B, this antibody will identify a single chain at ~31 KDa and for mature cathepsin B heavy chain, it will identify two-chains at ~24-28 kDa. This antibody does not cross react with any other related lysosomal cystein proteinase (cathepsin L, H, K, S, V, W).

REACTIVITY

Reactivity has been confirmed with human recombinant pro-cathepsin B by Western Blotting, and with normal human kidney tissues by immunohistochemistry. Based on amino acid sequence homology, reactivity with rhesus monkey, rat, canine, bovine and swine is also expected.

Sample	Western Blotting	Immuno-histochemistry (FFPE)
Human	+++	+++
Rhesus monkey	ND	ND
Rat	ND	ND
Canine	ND	ND
Bovine	ND	ND
Swine	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL
Immunohistochemistry (FFPE): 2.5-5 µg/mL

(cont')

STORAGE

Store at 2-8°C for up to one month. Store at –20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

Cathepsins are involved in lysosomal protein degradation, proenzyme activation, antigen processing, and hormone maturation. They are secreted by tumor cells and macrophages and catalyze the remodeling of extracellular matrix proteins. Cathepsin B is expressed during fetal lung development along with cathepsin H, K, L, and S at protein and mRNA levels.[1]

Experimental and clinical evidence has linked cathepsin B with stroke and Alzheimer as well as tumour invasion and metastasis. Cathepsin B expression is increased in many human cancers at the mRNA, protein and activity levels. Considering their role as target for cancer therapy, they can be also used as markers for prognosis of cancer.[2]

In addition, cathepsin B is frequently overexpressed in premalignant lesions, an observation that associates this protease with local invasive stages of cancer. Increased expression of cathepsin B in primary cancers, and especially in preneoplastic lesions, suggests that this enzyme might have pro-apoptotic features.[3,4] Some data support that cathepsin B, which is commonly overexpressed in human primary tumors, may have two opposing roles in malignancy: reducing the malignancy by its proapoptotic features and enhancing it by its known facilitation of invasion.[5]

REFERENCES

1. Buhling F, et al.*Dev Dyn* 225 (1):14-21, 2002.
2. Noruma T, et al. *J Med Invest* 52 (1-2):1-9. Review, 2005.
3. Podgorski I, et al. *Biochem Soc Symp (*70):263-76. Review, 2003.
4. Di Piazza M, et al. *J Virol* 81(8):418-98, 2007.
5. Foghsgaard L, et al. *The Journal of Cell Biology* 153 (5):999-1010, 2001.

RELATED PRODUCTS

Product	***Conjugate***	***Cat. No.***
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	***Goat anti-rabbit IgG (H+L)***	***Goat anti-mouse IgG (H+L)***	***Ex/Em****	***Fluorescence similar to--***
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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