



Qty: 100 µg/200 µL

Mouse anti-Hu Cathepsin L

Catalog No. 435700

Lot No.

## Mouse anti-Hu Cathepsin L

### 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: 33/1

Isotype: IgG1

### IMMUNOGEN

Purified human procathepsin L from conditioned culture medium of human non-small cell lung cancer EPLC (32M1) cell line.

### SPECIFICITY

This antibody is specific for human Cathepsin L (Cathepsin L precursor, MEP) protein (accession # NP\_001903.1, P07711), which is 100% identical with chimpanzee and 96% homologous with rhesus monkey. On Western blots of recombinant human Cathepsin L protein and 32M1 human non-small cell lung cancer cell lysates, it identifies the target band at ~31 kDa. This antibody also identifies the pro-Cathepsin L at ~42 kDa and heavy chain of two-chain mature of Cathepsin L (~24 kDa).<sup>2</sup> This antibody does not cross react with other related lysosomal cystein proteinases (e.g. cathepsin V) and it recognizes the epitope aa 241-244 (YKE) of human Cathepsin L.

### REACTIVITY

Reactivity has been confirmed with human recombinant cathepsin L and 32M1 cell lysates using Western blotting. The reactivity has been also confirmed with human thyroid carcinoma cell lines (FTC-238) by immunofluorescence.<sup>6</sup> Based on amino acid sequence homology, reactivity with chimpanzee and rhesus monkey is also expected.

Sample	Western Blotting	Immuno-fluorescence	Immuno-precipitation
Human	+++	+++ <sup>6</sup>	ND
Chimpanzee	ND	ND	ND
Rhesus monkey	ND	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  
**Immunofluorescence:** 2-5 µg/mL

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## 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

Cathepsin L is a member of the papain superfamily of cysteine proteases in human and mouse and, like many other proteases, it is synthesized as an inactive proenzyme. Cathepsin L is successively translated as pre-pro-Cathepsin L, transferred through the Golgi apparatus as pro-Cathepsin L and then stored in lysosomes as mature Cathepsin L. Cathepsin L is expressed during fetal lung development along with Cathepsins B, H, K, and S at protein and mRNA levels.<sup>1</sup>

Despite similar predicted molecular masses, pro-Cathepsin L in mouse and human cells migrates on SDS/PAGE gels with apparent molecular masses of 39 kDa and 42 kDa respectively.<sup>2</sup> The major excreted protein (MEP) of mouse fibroblasts is the precursor to Cathepsin L whose synthesis is induced by malignant transformation, growth factors, tumor promoters, and cyclic AMP.<sup>3</sup>

Cathepsin L directly participates in atherosclerosis by degrading elastin and collagen and regulates blood-borne leukocyte transmigration and lesion progression. Cathepsin L overexpression in human melanoma cells increases their tumorigenicity and switches their phenotype from non-metastatic to highly metastatic. The prevention of mucosal damage by Cathepsin inhibition could represent a new therapeutic approach.<sup>4</sup> It has also been demonstrated that inhibition of the enzyme (Cathepsin L) or proenzyme (pro-Cathepsin L) by low molecular weight inhibitors or antibodies, can lead to the suppression of tumors and metastases.<sup>5</sup>

## REFERENCES

1. Buhling F et al. *Dev Dyn* 225(1):14-21, 2002.
2. Weber E et al. *Hybridoma* 16(2):159-66, 1997.
3. Jean D et al. *Biochem J* 361(Pt 1):173-84, 2002.
4. Kitamoto S et al. *Circulation* 115(15):2065-75, 2007.
5. Rousselet N et al. *Cancer Res* 64(1):146-51, 2004.
6. Hombach-Klonisch S et al. *Am J Pathol* 169(2):617-32, 2006.

## RELATED PRODUCTS

<b>Product</b>	<b>Conjugate</b>	<b>Cat. No.</b>
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.

<b>Conjugate</b>	<b>Goat anti-rabbit IgG (H+L)</b>	<b>Goat anti-mouse IgG (H+L)</b>	<b>Ex/Em*</b>	<b>Fluorescence similar to--</b>
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](http://www.invitrogen.com/antibodies)

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