

## Product Information

### Monoclonal Anti-Cystatin B

#### Clone RJMW-2E7

produced in mouse, purified immunoglobulin

Catalog Number **C5243**

### Product Description

Monoclonal Anti-Cystatin B (mouse IgG1 isotype) is derived from the hybridoma RJMW-2E7 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with human cystatin B purified from human muscle and spleen (Gene ID: 1476).<sup>1</sup> The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Cystatin B specifically recognizes human<sup>1</sup> and monkey<sup>1</sup> cystatin B (~12 kDa) and does not recognize cystatin A.<sup>1</sup> The antibody may be used in several techniques including ELISA,<sup>1</sup> immunoblotting,<sup>1,9</sup> immunoprecipitation,<sup>1</sup> immunocytochemistry,<sup>1</sup> and immunohistochemistry.<sup>9</sup> The antibody epitope resides within amino-acids 31-39 of human cystatin B.<sup>1</sup>

Cathepsins are lysosomal proteases that play an important role in the intracellular degradation of exogenous and endogenous proteins, activation of enzyme precursors, and tumor invasion and metastasis.<sup>2-5</sup> They are normally localized in lysosomes of almost all mammalian cells, but under certain conditions they can be secreted from the cell. Cystatin B (CSTB) has been shown *in vitro* to be a reversible inhibitor of cathepsin B, H, L and S.<sup>1</sup> In patients with low expression of CSTB, like in epilepsy of Unverricht-Lundborg (EPM1), higher activity of cathepsin B, L and S is detected in lymphoblastoid cells. Mice deficient of CSTB, develop myoclonic seizures, ataxia, loss of cerebellar granule cells, neuronal atrophy and apoptosis, outside the cerebellum and gliosis. Thus CSTB may have a role in neuroprotection. In another physiological system, thymocytes from CSTB deficient mice showed a markedly increased response when exposed to staurosporin compared to thymocytes from wild-type mice. In human monocytes treated with LPS, CSTB expression is elevated, thus suggesting that this protein may be involved in immune responses to bacterial infection.<sup>6-8</sup> CSTB was implicated as a

possible biomarker for hepatocellular carcinomas (HCC) as serum CSTB level was much higher in HCC patients than in those with nonmalignant chronic liver disease.<sup>9</sup>

### Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~ 2 mg/mL

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

For extended storage, freeze at -20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

### Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using extracts of MCF7 cells.

**Note:** In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

### References

1. Alakurtti, K., et al., *Eur. J. Hum. Genet.*, **13**, 208-215 (2005).
2. Weber, E., et al., *Hybridoma*, **16**, 159-165 (1997).
3. Tolosa, E., et al., *J. Clin. Invest.*, **112**, 517-526 (2003).
4. Turk, B., and Stoka, V., *FEBS Lett.*, **581**, 2761-2767 (2007).

5. Igdoura, S.A., et al., *J. Histochem. Cytochem.*, **43**, 545-557 (1995).
6. Pennacchio, L.A., et al., *Nat. Genet.*, **20**, 251-258 (1998).
7. Shannon, P., et al., *J. Neuropathol. Exp. Neurol.*, **61**, 1085-1091 (2002).
8. Kopitar-Jerala, N., *FEBS Lett.*, **580**, 6295-6301 (2006).
9. Lee, M.J., et al., *Clin. Cancer Res.*, **14**, 1080-1089 (2008).

DZ,EK,KAA,PHC 03/08-1