

Product Information

Anti-TIMP2 antibody, Mouse monoclonal

Clone TM8, purified from hybridoma cell culture

Product Number **SAB4200814**

Product Description

Monoclonal Anti-TIMP2 (mouse IgG2a isotype) is derived from the TM8 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with recombinant human TIMP2 protein (GeneID: 7077). The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Product Number ISO2). The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-TIMP2 specifically recognizes human TIMP2. The antibody is recommended to use in various immunological techniques, including immunoblot (~24 kDa) and immunofluorescence. Detection of the TIMP2 band by immunoblotting is specifically inhibited by the immunogen.

TIMP2, Tissue Inhibitor of Metalloproteinases 2, also known as CSC-21K, is a member of the TIMP family of matrix metalloproteinases (MMPs) natural inhibitors. These proteins are involved in regulation of activated MMPs and in extracellular matrix degradation. The TIMPs family consists of 4 members which act in a non-selective manner. The inhibition of MMPs activity is mediated directly by blocking the MMPs catalytic zinc ion with the TIMPs N-terminal cysteine residue.¹⁻² Due to the pronounced inhibitory activity, the TIMPs are considered as a potential target in designing new inhibitor variants with altered specificity for MMPs and other zinc-dependent extracellular matrix (ECM) proteins.¹⁻²

TIMP2 is also highly studied for its MMP-independent effects including cell cycle regulation²⁻⁴ and its involvement in progression and invasiveness of several cancers (e.g. renal cell carcinoma,³ non-small cell lung cancer (NSCLC),⁵ and gastric cancer⁶).

In renal cell stress, TIMP2 is upregulated together with IGFBP7. These proteins are mediators of the G₁ cell cycle arrest, a known consequence of Acute Kidney Injury (AKI), which results in blocking endothelial cell proliferation and angiogenesis. A urine biomarker test based on measuring TIMP2 and IGFBP7 expression levels was FDA approved for risk assessment of developing moderate to severe AKI.³⁻⁴

Reagent

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

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing 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 0.5-1 µg/mL is recommended using extracts of HEK-293 cells overexpressing human TIMP2.

Immunofluorescence: a working concentration of 2.5-5 µg/mL is recommended using human HeLa cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration test.

References

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3. Su, L.J. et al., *Br. J. Anaesth.*, **121**, 350-57 (2018).
4. Vijayan, A. et al., *Am. J. Kidney Dis.*, **68**, 19-28 (2016).
5. Yang, J.Z. et al., *Eur. Rev. Med. Pharmacol. Sci.*, **22**, 4156-65 (2018).
6. Wang, W. et al., *Sci. Rep.*, **8**, 9629 (2018).

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