

## TIMP-3 (B-2): sc-373839



The Power to Question

## BACKGROUND

TIMP-1, TIMP-2, TIMP-3 and TIMP-4 (for tissue inhibitor of metalloproteinases 1, 2, 3 and 4) complex with metalloproteinases such as collagenases, gelatinases and stromelysins, resulting in irreversible inactivation of the metalloproteinase. TIMP-1 has been found to be identical to EPA (erythroid-potentiating activity). Parathyroid hormone has been shown to be a regulator of TIMP-2 in osteoblastic cells. TIMP-3 may be involved in regulating trophoblastic invasion of the uterus and remodeling of the extracellular matrix during the folding of epithelia, and in the formation, branching and expansion of epithelial tubes. TIMP-4 is most highly expressed in heart, with low levels expressed in liver, brain, lung, thymus and spleen.

## REFERENCES

1. Docherty, A.J., et al. 1985. Sequence of human tissue inhibitor of metalloproteinases and its identity to erythroid-potentiating activity. *Nature* 318: 66-69.
2. Carmichael, D.F., et al. 1986. Primary structure and cDNA cloning of human fibroblast collagenase inhibitor. *Proc. Natl. Acad. Sci. USA* 83: 2407-2411.

## CHROMOSOMAL LOCATION

Genetic locus: TIMP3 (human) mapping to 22q12.3; Timp3 (mouse) mapping to 10 C1.

## SOURCE

TIMP-3 (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 181-210 at the C-terminus of TIMP-3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373839 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

TIMP-3 (B-2) is recommended for detection of TIMP-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TIMP-3 (B-2) is also recommended for detection of TIMP-3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TIMP-3 siRNA (h): sc-37022, TIMP-3 siRNA (m): sc-37023, TIMP-3 shRNA Plasmid (h): sc-37022-SH, TIMP-3 shRNA Plasmid (m): sc-37023-SH, TIMP-3 shRNA (h) Lentiviral Particles: sc-37022-V and TIMP-3 shRNA (m) Lentiviral Particles: sc-37023-V.

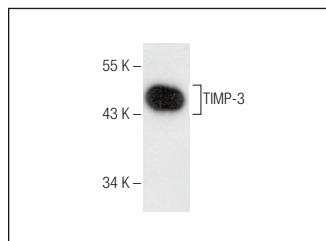
Molecular Weight of TIMP-3: 30 kDa.

Positive Controls: mouse placenta extract: sc-364247.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



TIMP-3 (B-2): sc-373839. Western blot analysis of human recombinant TIMP-3.

## SELECT PRODUCT CITATIONS

1. Deb, G., et al. 2015. Epigenetic induction of tissue inhibitor of matrix metalloproteinase-3 by green tea polyphenols in breast cancer cells. *Mol. Carcinog.* 54: 485-499.
2. Du, M., et al. 2016. Nkx2-5 is expressed in atherosclerotic plaques and attenuates development of atherosclerosis in apolipoprotein E-deficient mice. *J. Am. Heart Assoc.* 5: e004440.
3. Cho, C.S., et al. 2019. Concurrent activation of growth factor and nutrient arms of mTORC1 induces oxidative liver injury. *Cell Discov.* 5: 60.
4. Zhao, D.L., et al. 2020. TIMP3/TGF-β1 axis regulates mechanical loading-induced chondrocyte degeneration and angiogenesis. *Mol. Med. Rep.* 22: 2637-2644.
5. Cheng, Y.H., et al. 2021. Treatment of 13-*cis* retinoic acid and 1,25-dihydroxyvitamin D<sub>3</sub> inhibits TNF-α-mediated expression of MMP-9 protein and cell invasion through the suppression of JNK pathway and microRNA 221 in human pancreatic adenocarcinoma cancer cells. *PLoS ONE* 16: e0247550.
6. Daraban Bocaneti, F., et al. 2022. Expression of collagenases (matrix metalloproteinase-1, -8, -13) and tissue inhibitor of metalloproteinase-3 (TIMP-3) in naturally occurring bovine cutaneous fibropapillomas. *Front. Vet. Sci.* 9: 1072672.
7. Sharma, S., et al. 2023. HDAC5 modulates SATB1 transcriptional activity to promote lung adenocarcinoma. *Br. J. Cancer* 129: 586-600.
8. Zhou, Y., et al. 2023. Targeting of HBP1/TIMP3 axis as a novel strategy against breast cancer. *Pharmacol. Res.* 194: 106846.
9. Mohajerani, F., et al. 2024. CLEC19A overexpression inhibits tumor cell proliferation/migration and promotes apoptosis concomitant suppression of PI3K/AKT/NFκB signaling pathway in glioblastoma multiforme. *BMC Cancer* 24: 19.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.