abcam

ab313425

Anti-TIMP4 antibody [RP23040074]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Multiclonal
Immunogen	Recombinant Fragment Protein within Human Metalloproteinase inhibitor 4. The exact immunogen used to generate this antibody is proprietary information. Database link Q99727
Clone number	RP23040074
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	-

WB

Tested

Species	Human
Dilution info	1-3 µg/mL
Notes	-

I-ELISA

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	2-4 µg for 10^6 Cells
Notes	-

Target data

See full target information Metalloproteinase inhibitor 4

Function	Complexes with metalloproteinases (such as collagenases) and irreversibly inactivates them by binding to their catalytic zinc cofactor. Known to act on MMP-1, MMP-2, MMP-3, MMP-7 and MMP-9.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Tissue Inhibitor of Metalloproteinases 4 (TIMP4) a member of the TIMP family plays a mechanical role by inhibiting matrix metalloproteinases (MMPs). This inhibition helps regulate extracellular matrix (ECM) remodeling. TIMP4 weighs approximately 22 kDa and is expressed in various tissues including the heart brain and reproductive organs. It binds directly to MMPs forming stable complexes that prevent the degradation of ECM components.
Biological function summary	TIMP4 contributes to maintaining tissue homeostasis and integrity. By regulating ECM degradation it influences processes such as cell migration proliferation and angiogenesis. TIMP4 does not work alone; it associates with enzymes like MMP-2 and MMP-14 modulating their activities to keep ECM dynamics in check. This regulation is essential for normal physiological functions and also during tissue repair.
Pathways	TIMP4 participates in the balance between ECM synthesis and degradation. It takes part in the ECM receptor interaction and focal adhesion pathways. These pathways involve several proteins including integrins and collagens which interact with ECM components modulated by TIMP4 activity. TIMP4 helps coordinate cellular responses to environmental changes through these pathways thereby influencing cell behavior and tissue organization.

Associated diseases and disorders	TIMP4 has associations with cardiovascular diseases and cancer. In cardiac contexts altered TIMP4 levels impact heart function and remodeling often linked to cardiovascular diseases. Its dysregulation can contribute to tumor progression in cancers by affecting ECM degradation and subsequent metastasis. TIMP4's interaction with proteins like MMP-9 links it to both tumor invasiveness and vascular remodeling in these disease states.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

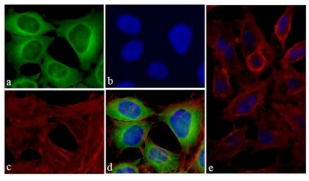
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

5 product images

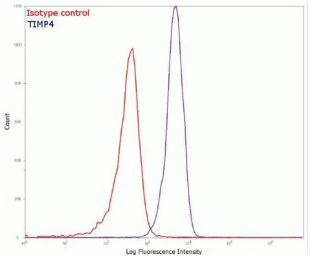


Immunocytochemistry/ Immunofluorescence - Anti-TIMP4 antibody [RP23040074] (ab313425)

TIMP4 Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rabbit Anti-TIMP4 antibody

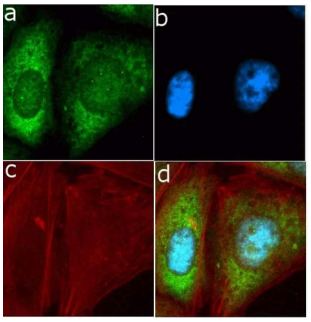
Immunofluorescent analysis of 70% confluent log phase HeLa cells fixed with 4% paraformaldehyde for 15 minutes; permeabilized with 0.25% Triton X-100 for 10 minutes followed by blocking with 5% BSA for 1 hour at room temperature labeling TIMP4 with ab313425 at 1 µg-2 µg dilution, followed by Alexa Fluor 488 Goat anti-Rabbit IgG Secondary Antibody at 1/400 dilution for 30 minutes at room temperature (Panel a/ green). Nuclei (Panel b/ blue) were stained with DAPI. F-actin (Panel c/ red) was stained with Alexa Fluor 594 Phalloidin. Panel d is a merged image

showing cytoplasmic localization of TIMP4. Panel e shows no primary antibody control. The images were captured at 20X magnification.



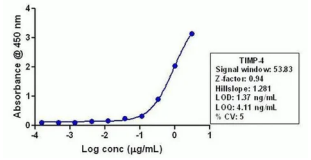
Flow Cytometry - Anti-TIMP4 antibody [RP23040074] (ab313425)

Flow cytometry analysis of Hela cells fixed and permeabilized using FIX & PERM reagent labeling TIMP4 with ab313425. Detection was performed using an Alexa Fluor 488 Goat anti-Rabbit IgG (right peak) compared to an isotype control (left peak).



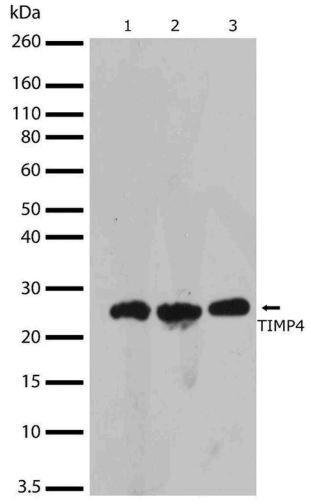
Immunocytochemistry/ Immunofluorescence - Anti-TIMP4 antibody [RP23040074] (ab313425)

Immunofluorescent analysis of U2OS cells fixed using 4% formaldehyde (reconstituted in 1X PBS) for 10 min at room temperature and permeabilized using 0.1 % Triton X-100 in PBS for 15 min at room temperature labeling TIMP4 with ab313425. followed by detection using an Alexa Fluor 488-conjugated Goat anti-Rabbit secondary antibody (green) (Image A). Nuclei were stained using DAPI (Image B) and actin stained with Alexa Fluor 594 phalloidin (red) (image C). Image D is a composite image showing cytoplasmic localization of TIMP4.



ELISA - Anti-TIMP4 antibody [RP23040074] (ab313425)

Indirect ELISA analysis of endogenous TIMP4 HeLa lysate coated onto the plate using ab313425 at various dilutions. A non-linear regression analysis was performed (4 PL) and LOD and LOQ for the antibody were determined.



Western blot - Anti-TIMP4 antibody [RP23040074] (ab313425)

All lanes:
Western blot - Anti-TIMP4 antibody [RP23040074] (ab313425) at 2 µg/mL

Lane 1:
HeLa cell lysate

Lane 2:
HEK293 cell lysate

Lane 3:
MDA-MB-231 cell lysate

Developed using the ECL technique.

Predicted band size: 26 kDa

Observed band size: 25 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.