

# Rat TIMP-1 / TIMP1 Protein

Catalog Number: 80064-RNAH



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

TIMP1

### Protein Construction:

A DNA sequence encoding the rat TIMP1 (P01860) (Met1-Ala217) was expressed and purified.

**Source:** Rat

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 97 % as determined by SDS-PAGE

### Bio Activity:

Measured by its ability to inhibit human MMP2 cleavage of a fluorogenic peptide substrate MCA-PLGLDPA-AR-NH<sub>2</sub>, AnaSpec Catalog # 27076. The IC<sub>50</sub> value is approximately 4 nM.

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Cys 24

### Molecular Mass:

The recombinant rat TIMP1 consists of 194 amino acids and has a predicted molecular mass of 21.5 kDa. As a result of glycosylation, the apparent molecular mass of the recombinant protein is approximately 28 kDa in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile 50mM Tris, 100mM NaCl, pH 7.0.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

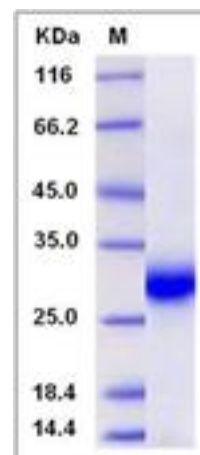
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

TIMP metalloproteinase inhibitor 1, also known as TIMP-1/TIMP1, Collagenase inhibitor 16C8 fibroblast Erythroid-potentiating activity, TPA-S1TPA-induced protein Tissue inhibitor of metalloproteinases 1, is a natural inhibitors of the matrix metalloproteinases (MMPs), a group of peptidases involved in degradation of the extracellular matrix. TIMP-1/TIMP1 is found in fetal and adult tissues. Highest levels are found in bone, lung, ovary and uterus. Complexes with metalloproteinases and irreversibly inactivates them by binding to their catalytic zinc cofactor. TIMP-1/TIMP1 mediates erythropoiesis in vitro; but, unlike IL-3, it is species-specific, stimulating the growth and differentiation of only human and murine erythroid progenitors. In addition to its inhibitory role against most of the known MMPs, the protein is able to promote cell proliferation in a wide range of cell types, and may also have an anti-apoptotic function. Transcription of this protein encoding gene is highly inducible in response to many cytokines and hormones. In addition, the expression from some but not all inactive X chromosomes suggests that this gene inactivation is polymorphic in human females. This encoding gene is located within intron 6 of the synapsin I gene and is transcribed in the opposite direction. Complexes with metalloproteinases and irreversibly inactivates them by binding to their catalytic zinc cofactor. TIMP-1/TIMP1 is Known to act on MMP-1, MMP-2, MMP-3, MMP-7, MMP-8, MMP-9, MMP-10, MMP-11, MMP-12, MMP-13 and MMP-16.

## References

- 1.Hornebeck W (2004). Down-regulation of tissue inhibitor of matrix metalloproteinase-1 (TIMP-1) in aged human skin contributes to matrix degradation and impaired cell growth and survival.. *Pathol. Biol.* 51 (10): 569-73.
- 2.Soini Y, *et al.* (2001) Expression of MMP2, MMP9, MT1-MMP, TIMP-1, and TIMP2 mRNA in valvular lesions of the heart. *J Pathol.* 194(2):225-31.
- 3.Wang X, *et al.* (1999) Analysis of coding sequences for tissue inhibitor of metalloproteinases 1 (TIMP-1) and 2 (TIMP2) in patients with aneurysms. *Matrix Biol.* 18(2):121-4.

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