APA129Bo01 100μg
Active Tissue Inhibitors Of Metalloproteinase 3 (TIMP3)
Organism Species: *Bos taurus; Bovine (Cattle)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Pro31~Thr209
Tags: N-terminal His-tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% Sarcosyl, 5%Trehalose .
Original Concentration: 200μg/mL
Applications: Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 9.4
Predicted Molecular Mass: 24.5kDa
Accurate Molecular Mass: 25kDa as determined by SDS-PAGE reducing conditions.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.
Store at 2-8ºC for one month.
Aliquot and store at -80ºC for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37ºC for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

PQDAFCNSDI VIRAKVVGKK
LLKEGPFGTM VYTIKQMKMY RGFTKMPHVQ YIHTEASESL CGLKLEVNKY
QYLLTGRVYD GKMYTGLCNF VERWDQLTLS QRKGLNYRYH LGCNCKIKSC
YYLPCFVTSK NECLWTDMFS NFGYPGYQSK HYACIRQKGG YCSWYRGWAP
PDKSIINAT

[ACTIVITY]

Tissue Inhibitors of Metalloproteinase 3 (TIMP3) is a key extracellular matrix protein encoded by the TIMP3 gene, playing pivotal roles in regulating matrix metalloproteinase (MMP) activity. It is widely expressed in various tissues, participating in tissue remodeling, angiogenesis, and inflammation. Dysregulation of TIMP3 is linked to multiple diseases, including cancer, cardiovascular disorders, and degenerative conditions, due to its ability to inhibit MMP-mediated extracellular matrix degradation. TIMP3 binds specifically to MMP9 with high affinity, forming a stable complex that potently suppresses MMP9’s proteolytic activity to maintain tissue homeostasis.Thus a functional ELISA assay was conducted to detect the interaction of recombinant cattle TIMP3 and recombinant human MMP9. Briefly, TIMP3 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to MMP9-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-TIMP3 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 μL stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant cattle TIMP3 and

recombinant human MMP9 was shown in Figure 1, the EC50 for this effect is 0.83911μg/mL.

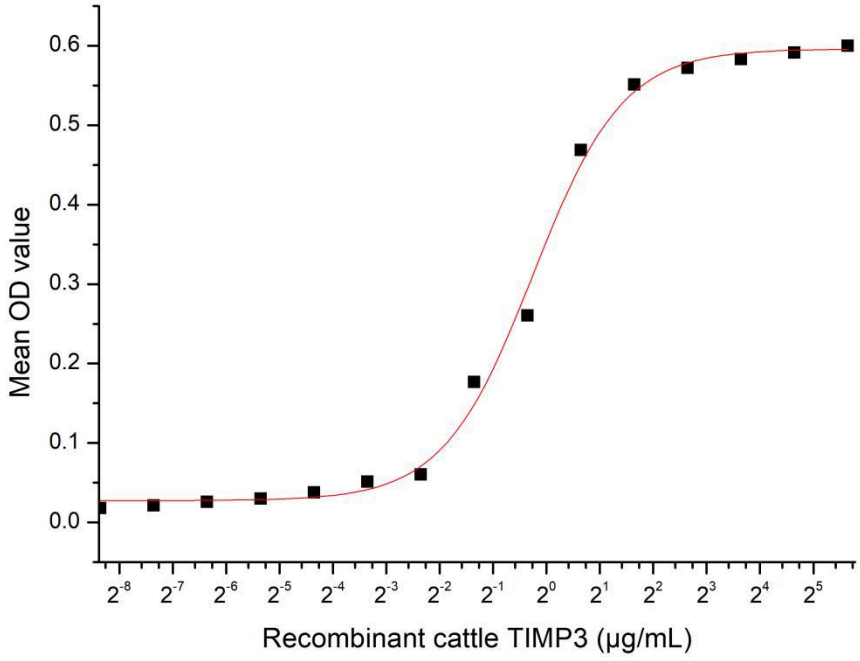


Figure 1. The binding activity of recombinant cattle TIMP3 and human MMP9

[IDENTIFICATION]

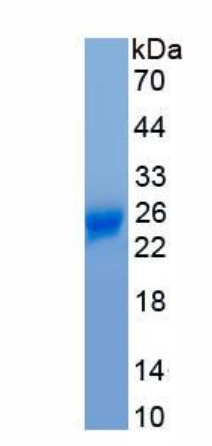


Figure 2. SDS-PAGE

Sample: Active recombinant TIMP3, Cattle

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.