APC056Hu01 100μg
Active Matrix Metalloproteinase 14 (MMP14)
Organism Species: *Homo sapiens* (Human)
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: Tyr112~Gly321
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: 5.7
Predicted Molecular Mass: 27.4kDa
Accurate Molecular Mass: 27kDa 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 37°C 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]

YAIQGLKWQ HNEITFCIQN YTPKVGEYAT YEAIRKAFRV
WESATPLRFR EVPYAYIREG HEKQADIMIF FAEGFHGDST PFDGEGGFLA
HAYFPGPNIG GDTHFDSAEP WTVRNEDLNG NDIFLVAVHE LGHALGLEHS
SDPSAIMAPF YQWMDTENFV LPDDDRRGIQ QLYGGESGFP TKMPPQPRTT
SRPSVPDKPK NPTYGPNICD G

[ACTIVITY]

Matrix Metalloproteinase 14 (MMP14), also known as membrane-type 1 MMP (MT1-MMP), is a pivotal enzyme in the matrix metalloproteinase family. Unlike most MMPs secreted into the extracellular space, MMP14 is a transmembrane protease that anchors to the cell membrane. It plays a crucial role in degrading extracellular matrix (ECM) components, particularly collagen, thereby regulating tissue remodeling, wound healing, and developmental processes. Its ability to activate other MMPs, like MMP2, amplifies its proteolytic cascade. Importantly, MMP14 is a key mediator in cancer progression, facilitating tumor invasion, angiogenesis, and metastasis by breaking down physical barriers in the ECM. Its dysregulation is also linked to inflammatory and vascular diseases.Besides,Tumor Necrosis Factor Alpha (TNFa) has been identified as an interactor of MMP14, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human MMP14 and recombinant human TNFa. Briefly, biotin-linked TNFa were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100μl were then transferred to MMP14-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50μl stop solution to the wells and read at 450nm immediately. Measured by its binding ability in a functional ELISA. When

Recombinant MMP14 is immobilized at 2 μg/mL(100 uLwell), the concentration of TNFa that produces 50% optimal bindingresponse is found to be approximately 0.178 μg/mL.

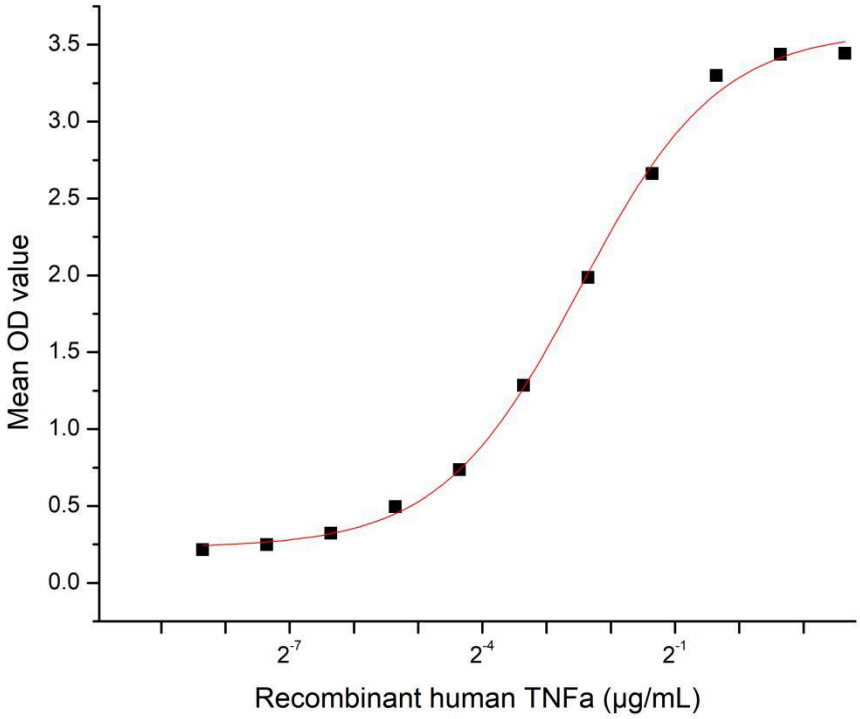

Figure 1. The binding activity of recombinant human MMP14 and recombinant human TNFa

[IDENTIFICATION]

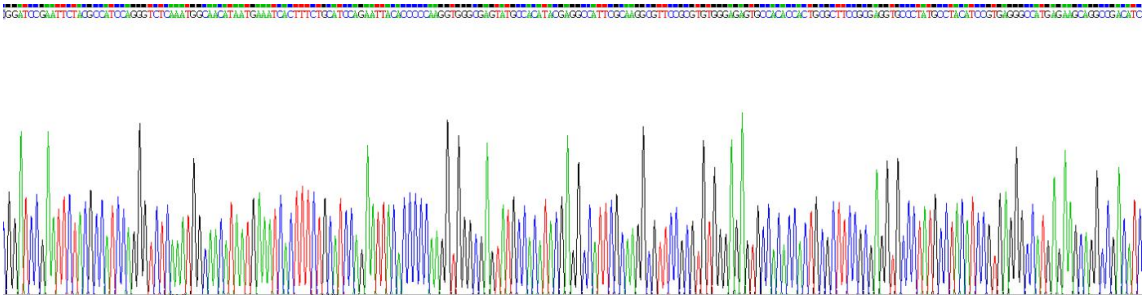

Figure 2. Gene Sequencing (extract)

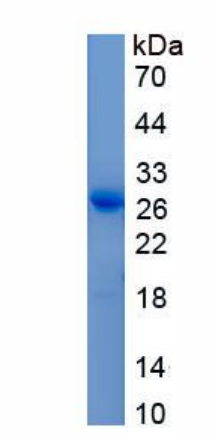

Figure 3. SDS-PAGE

Sample: Active recombinant MMP14, Human

[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.