APA149Mu01 100μg
Active Collagen Type IV Alpha 1 (COL4a1)
Organism Species: *Mus musculus (Mouse)*
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: Pro1416~Thr1669
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: 7.8
Predicted Molecular Mass: 31.3kDa
Accurate Molecular Mass: 31kDa 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]

PGPRG FPGPPGPDGL PGSMGPPGTP SVDHGFLVTR
HSQTTDDPLC PPGTKILYHG YSLLYVQGNE RAHGQDLGTA GSCLRKFSTM
PFLFCNINNV CNFASRNDYS YWLSTPEPMP MSMAPISGDN IRPFISRCAV
CEAPAMVMAV HSQTIQIPQC PNGWSSLWIG YSFVMHTSAG AEGSGQALAS
PGSCLEEFRS APFIECHGRG TCNYYANAYS FWLATIERSE MFKKPTPSTL
KAGELRTHVS RCQVCMRRT

[ACTIVITY]

Collagen Type IV Alpha 1 (COL4a1) is a key structural component of basement membranes. It forms a network with other type IV collagen chains to provide mechanical stability and organizational scaffolding for tissues. Primarily expressed in vascular, renal, and neural tissues, COL4A1 mutations are associated with a spectrum of disorders, including hereditary angiopathy with nephropathy, aneurysms, and muscle cramps (HANAC) syndrome, as well as porencephaly and hemorrhagic stroke. These mutations disrupt extracellular matrix integrity, leading to vascular fragility and tissue dysfunction. Beyond its structural role, COL4A1 interacts with signaling molecules to regulate cell adhesion and differentiation. Its critical function in tissue development and maintenance makes it a focus of research in genetic and vascular diseases.Besides,Glycoprotein VI (GP6) has been identified as an interactor of COL4a1, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant mouse COL4a1 and recombinant human GP6. Briefly, COL4a1 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to GP6-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-COL4a1 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 mouse COL4a1 and recombinant human GP6 was shown in Figure 1, the EC50 for this effect is 0.05μg/mL.

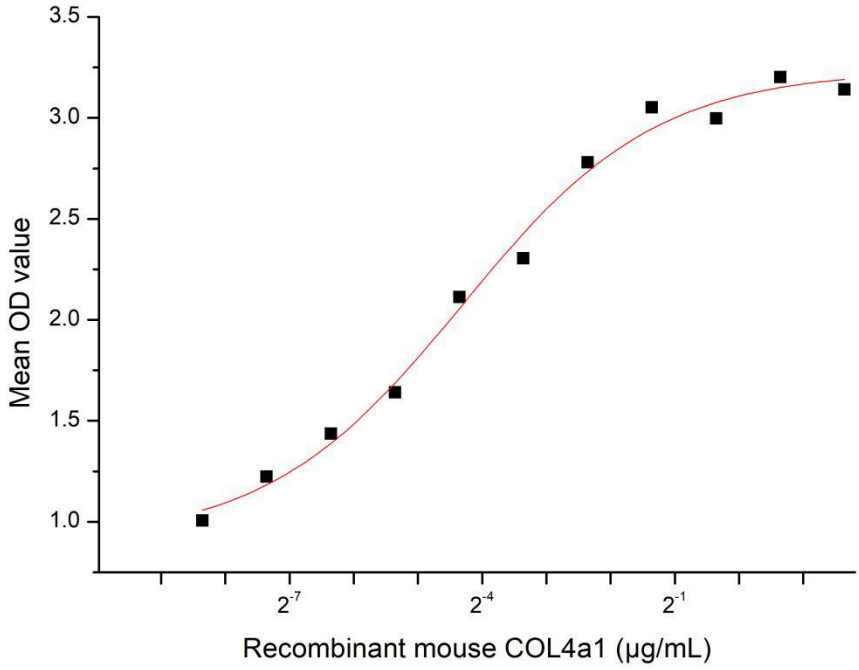

Figure 1. The binding activity of recombinant mouse COL4a1 and recombinant human GP6

[IDENTIFICATION]

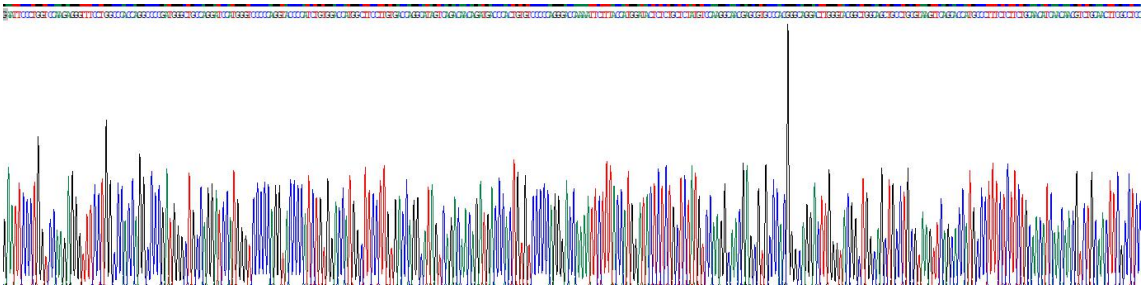

Figure 2. Gene Sequencing (extract)

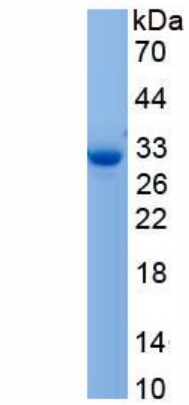

Figure 3. SDS-PAGE

Sample: Active recombinant COL4a1, Mouse

[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.