

APA785Mu61 100µg
Active Kidney Injury Molecule 1 (Kim1)
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: Eukaryotic expression.

Host: 293F cell

Residues: Tyr22~Gly237

Tags: N-terminal His-tag

Purity: >90%

Endotoxin Level: <1.0EU per 1µg (determined by the LAL method).

Buffer Formulation: PBS, pH7.4, containing 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: 8.7

Predicted Molecular Mass: 25.3kDa

Accurate Molecular Mass: 56kDa as determined by SDS-PAGE reducing conditions.

Phenomenon explanation:

The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[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 2-8°C for one month.

Aliquot and store at -80°C 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]

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YVEVKGVVGHVPTLPCTYSTYRGITTTWGRGQCPSSACQNTLIWNGHRVTVQKSSRYNLKGHISEGDVSLTIENSVESDSGLYCCRV  
EIPGWFNQKVTFLSLQVKPEIPTRPPTTRPTTTRPTATGRPTTISTRSTHVPTSIRVSTSTPPTSTHTWTHKPEPTTFCPHETTAEVTGI  
PSHTPTDWNNGTVTSSGDTWSNHTEAIPGKPKQKNPTKG
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[ACTIVITY]

Kidney Injury Molecule 1, also known as Kim1 or TIM-1, is a transmembrane glycoprotein encoded by the HAVCR1 gene. It is minimally expressed in healthy kidneys but markedly upregulated following renal injury, making it a sensitive biomarker for acute kidney injury (AKI). Kim1 plays a dual role in kidney damage: it promotes phagocytosis of apoptotic cells and cellular debris, aiding tissue repair, while its persistent expression may contribute to fibrosis and chronic kidney disease (CKD). Structurally, Kim1 contains an immunoglobulin-like domain and a mucin-rich extracellular region. Beyond AKI, Kim1 is implicated in immune regulation and viral entry. Its diagnostic and therapeutic potential is actively researched. Besides, Death receptor 5 (DR5) has been identified as an interactor of Kim1, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant mouse Kim1 and recombinant rat DR5. Briefly, Kim1 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to DR5-coated microtiter wells and incubated for 1h at 37°C. Wells were washed with PBST and incubated for 1h with anti-Kim1 pAb, then

aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37 °C , wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37°C. Finally, add 50 µL stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant mouse Kim1 and recombinant rat DR5 was shown in Figure 1, the EC50 for this effect is 0.36µg/mL.

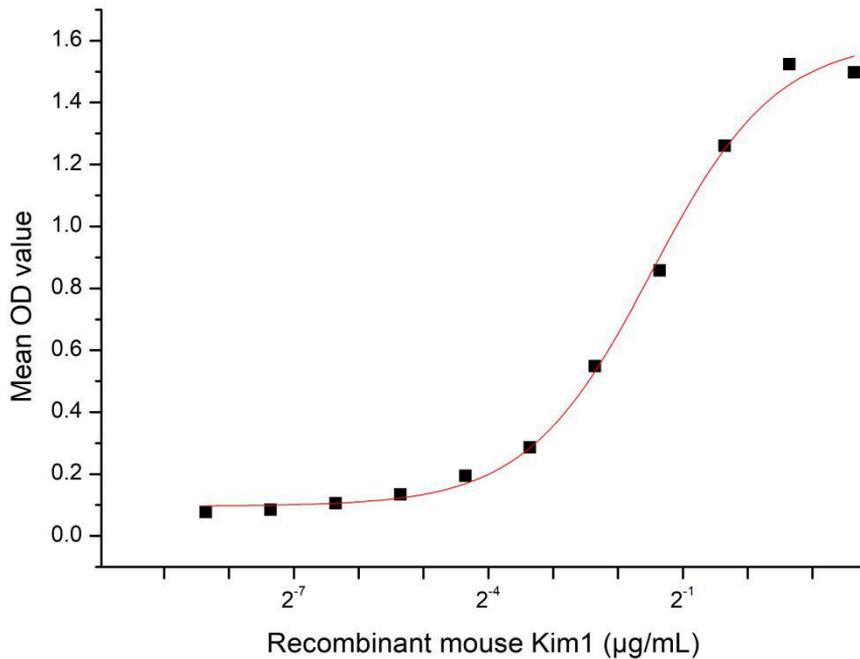


Figure 1. The binding activity of recombinant mouse Kim1 and recombinant rat DR5

[IDENTIFICATION]

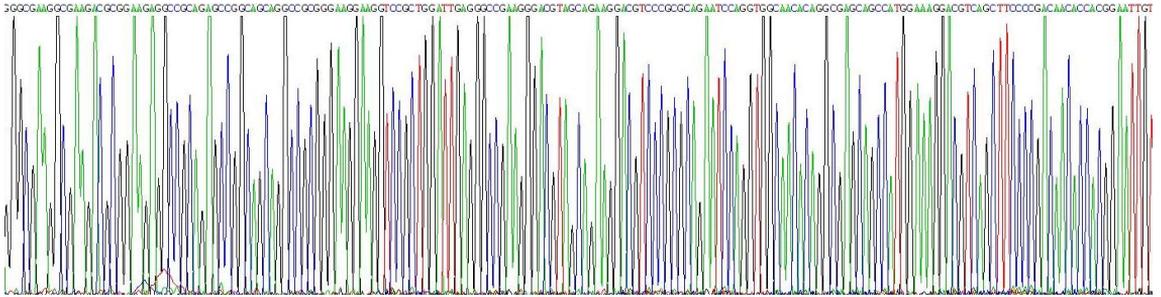


Figure 2. Gene Sequencing (extract)

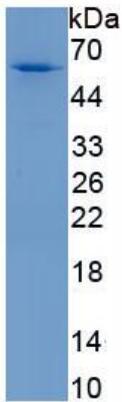


Figure 3. SDS-PAGE

Sample: Active recombinant Kim1, 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.