

**APA217Hu61 100µg**

**Active Alpha-1-Microglobulin (a1M)**

**Organism Species: *Homo sapiens* (Human)**

***Instruction manual***

FOR RESEARCH USE ONLY

NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

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13th Edition (Revised in Aug, 2023)

## **[ PROPERTIES ]**

**Source:** Eukaryotic expression.

**Host:** 293F cell

**Residues:** Gly20~Asn352

**Tags:** N-terminal His Tag and C-terminal Fc Region of Human IgG1

**Purity:** >95%

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

**Buffer Formulation:** PBS, pH7.4, containing 5% Trehalose .

**Original Concentration:** 200µg/mL

**Applications:** Cell culture; Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

**Predicted isoelectric point:** 5.8

**Predicted Molecular Mass:** 64.3kDa

**Accurate Molecular Mass:** 54kDa 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 2-8°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

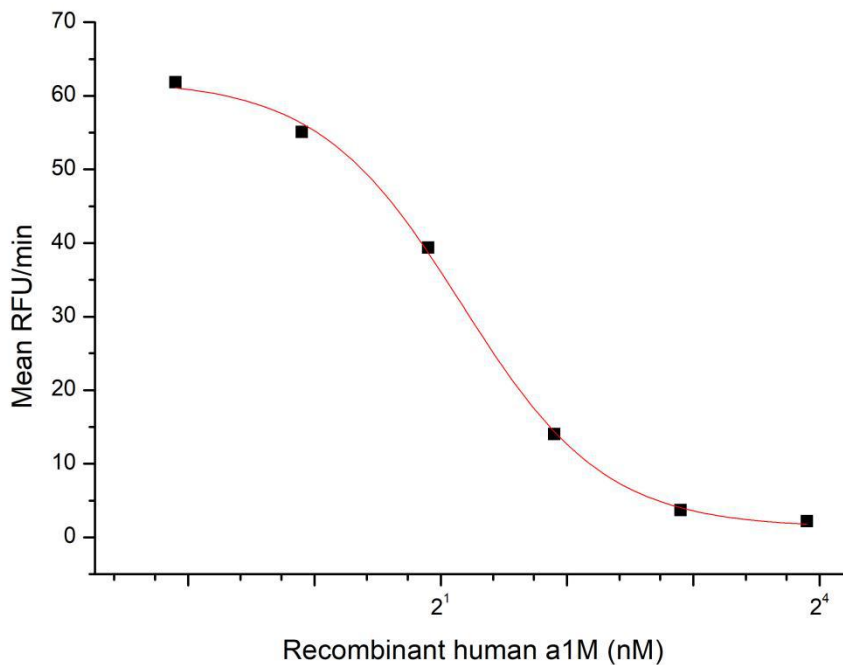
protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

## **[ SEQUENCE ]**

```
GPVTPPDNIQVQENFNISRIYGKWNLAIGSTCPWLKKIMDRMTVSTLVLGEGATEAEISMTSTRWRKGVCEETSGAYEKDSTDGKFL  
YHKSKWNITMESYVVHTNYDEYAIFLTCKFSRHGPTITAKLYGRAPQLRETLQDFRVVAQGVGIPEDSIFTMADRGECPGEQEPEP  
ILIPRVRRAVL PQEEEGSGGQLVTEVTKKEDSCQLGYSAGPCMGHTSRYFYNGTSMACETFQYGGCMGNGNMFVTEKECLQTCRTVAA  
CNLP IVRGPCRAFIQLWAFDAVKGKCVLPYGGCQGNKNKFYSEKECREYCGVPGDGDEELLRFNS
```

## **[ ACTIVITY ]**

Alpha-1-Microglobulin (α1M) is a small protein belonging to the superfamily of lipocalins, which is present in various body fluids such as plasma and cerebrospinal fluid. It has a role in the transportation of molecules like metals and serves as a marker for certain diseases, including kidney and liver disorders. The activity of recombinant human A1M was measured by its ability to inhibit trypsin cleavage of a fluorogenic peptide substrate MCA-Arg-Pro-Lys-Pro-Val-Glu-NVAL-Trp-Arg-Lys(DNP)-NH<sub>2</sub> in the assay buffer 50 mM Tris, 10 mM CaCl<sub>2</sub>, 150 mM NaCl, 0.05% (w/v) Brij-35, pH 7.5. Trypsin was diluted to 50 ug/ml in the assay buffer and 25 ul different concentrations of recombinant human α1M (MW: 64 KD) was incubated with 25ul diluted trypsin at 37 °C for 15 minutes. Loading 50 µL of the incubated mixtures which were diluted five-fold in assay buffer into empty wells of a plate, and start the reaction by adding 50 µL of 20 µM substrate. Include a substrate blank containing 50 µL of assay buffer and 50 µL of 20 µM substrate. Then read at excitation and emission wavelengths of 320 nm and 405 nm, respectively, in kinetic mode for 5 minutes. The result was shown in Figure 1 and it was obvious that recombinant human α1M significantly decreased trypsin activity. The inhibition IC<sub>50</sub> was <2.2 nM.



**Figure 1. Inhibition of trypsin activity by recombinant human a1M**

## **[ IDENTIFICATION ]**



**Figure 2. SDS-PAGE**

**Sample: Active recombinant a1M, 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.