

**APA151Hu62 100µg**

**Active Prostate Specific Antigen (PSA)**

**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:** Met1~Pro261

**Tags:** N-terminal His-tag

**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:** Activity Assays.

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

**Predicted isoelectric point:** 7.9

**Predicted Molecular Mass:** 31.2kDa

**Accurate Molecular Mass:** 33kDa 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 ]**

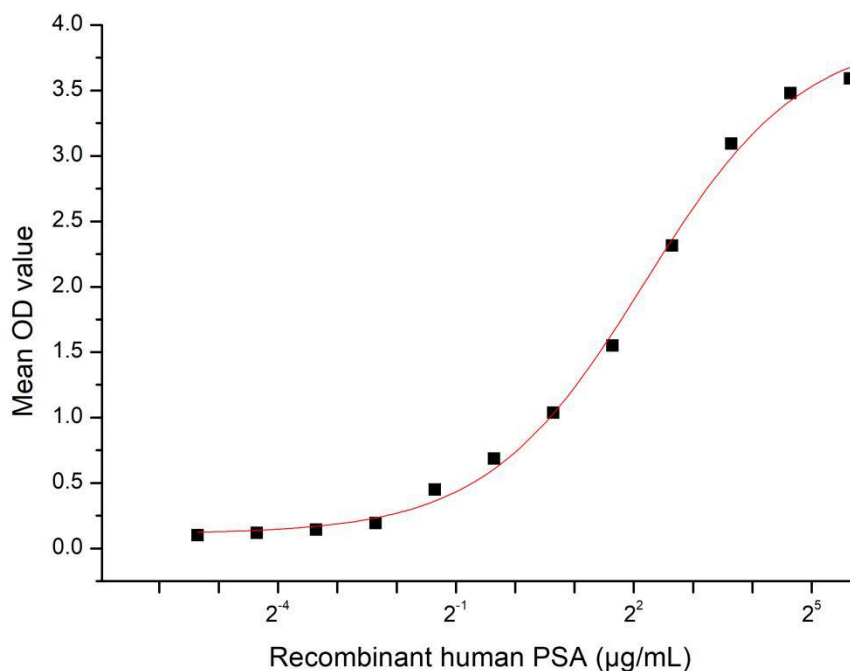
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TAAHCIRNKSVILLGRHSLFHPEDTGQVFQVSHSFPHPLYDMSLLKNRFLRPGDDSSHDLMLLR  
LSEPAELTDAVKVMDLPTQEPALGTTTCYASGWGSIEPEEFLTPKKLQCVDLHVISNDVCAQVHP  
QKVTKFMLCAGRWTGGKSTCSGDSGGPLVCNGVLQGITSWGSEPCALPERPSLYTKVVHYRK  
WIKDTIVANP

## **[ ACTIVITY ]**

Prostate Specific Antigen (PSA) is a serine protease enzyme primarily produced by the epithelial cells of the prostate gland. Its key physiological function is to liquefy seminal fluid, facilitating sperm motility. Clinically, measuring serum PSA levels is a cornerstone for screening and monitoring prostate cancer, as elevated concentrations often indicate malignancy, though benign conditions like prostatitis can also cause increases. It is considered an important, though not perfectly specific, tumor marker. PSA can form complexes with other serum proteins, most notably with Alpha-2-Macroglobulin (a2M), a large plasma protease inhibitor. This binding irreversibly encapsulates PSA, effectively neutralizing its enzymatic activity and removing it from serological detection. Thus to detect the activity of recombinant PSA, a functional ELISA assay was performed to evaluate the interaction between recombinant human PSA and recombinant mouse a2M.

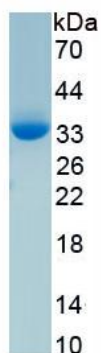
Briefly, biotin-linked PSA were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100µl were then transferred to a2M-coated microtiter wells and incubated for 1h at 37 °C . Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 °C . Finally, add 50µl stop solution to the wells and read at 450nm immediately. The binding activity of PSA and a2M was shown in Figure 1, the

EC50 for this effect is 4.5µg/mL.



**Figure 1. The binding activity of recombinant human PSA and recombinant mouse a2M**

## **[ IDENTIFICATION ]**



**Figure 2. SDS-PAGE**

**Sample: Active recombinant PSA, 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.