**APA800Hu04 10μg**
**Active Pregnancy Associated Plasma Protein A (PAPPA)**
**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:** Leu317~Pro532
**Tags:** N-terminal His-tag
**Purity:** >80%
**Endotoxin Level:** <1.0EU per 1μg (determined by the LAL method).
**Buffer Formulation:** 20mM Tris, 150mM NaCl, pH8.0, containing 0.01% Sarcosyl, 5%Trehalose.
**Original Concentration:** 250μg/mL
**Applications:** Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
**Predicted isoelectric point:** 5.3
**Predicted Molecular Mass:** 25.9kDa
**Accurate Molecular Mass:** 33kDa 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 20mM Tris, 150mM NaCl (pH8.0) 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 ]

LLDT SLEPPLCGQT LCDNTEVIAS YNQLSSFRQP
KVVRYRVVNL YEDDHKNPTV TREQVDFQHH QLAEAFKQYN ISWELDVLEV
SNSSLRRRLI LANCDISKIG DENCDPECNH TLTGHDGGDC RHLRHPAFVK
KQHNGVCDMD CNYERFNFDG GECCDPEITN VTQTCFDPDS PHRAYLDVNE
LKNILKLDGS THLNIFFAKS SEEELAGVAT WP

## [ ACTIVITY ]

Pregnancy-associated plasma protein A(PAPPA), also known as pappalysin-1, is a secreted protease whose main substrate is insulin-like growth factor binding proteins. PAPPA's proteolytic function is activated upon collagen binding. It is thought to be involved in local proliferative processes such as wound healing and bone remodeling. Low plasma level of this protein has been suggested as a biochemical marker for pregnancies with aneuploid fetuses (fetuses with an abnormal number of chromosomes). Besides, Plasminogen (Plg) has been identified as an interactor of PAPPA, thus a binding ELISA assay was conducted to detect the interaction of recombinant human PAPPA and recombinant human Plg. Briefly, biotinylated PAPPA were diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100μl were then transferred to Plg-coated microtiter wells and incubated for 1 h at 37℃. Wells were washed 3 times with PBST and

incubated for 0.5 h at 37℃ with SA labelled HRP. After incubation with SA labelled HRP, 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 450/630 nm immediately. The binding activity of PAPPA and Plg was shown in Figure 1, and the ED50 for this effect is 0.04936 ug/ml.

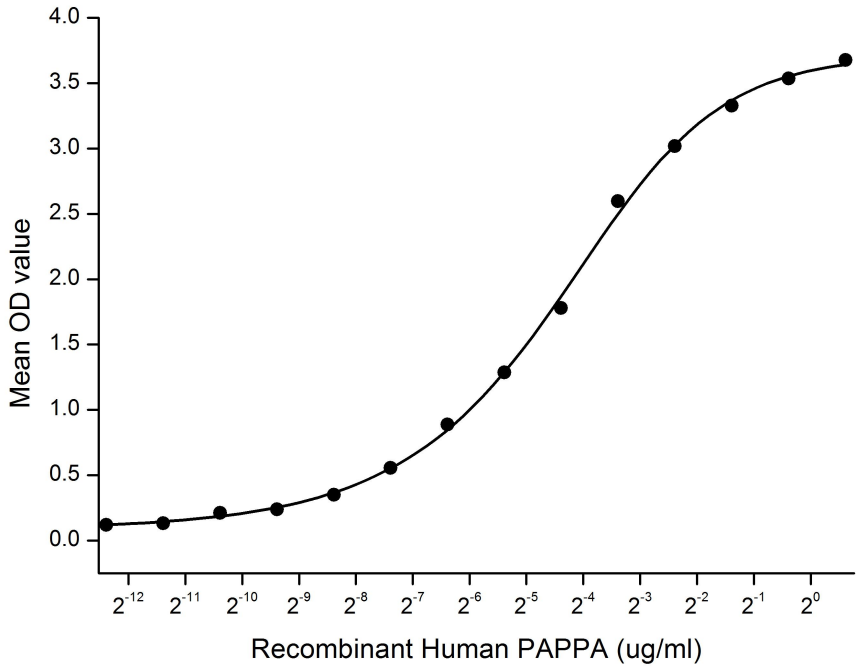


**Figure 1. The binding activity of PAPPA with Plg.**

## [ IDENTIFICATION ]

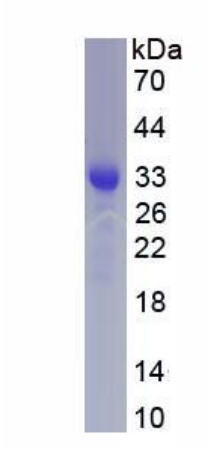


**Figure 2. SDS-PAGE**

**Sample: Active recombinant PAPPA, 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.