

**APB120Hu01 100µg  
Active Arginase (ARG)**

**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:** Prokaryotic expression.

**Host:** *E. coli*

**Residues:** Met1~Lys322

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

**Purity:** >98%

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

**Buffer Formulation:** 20mM Tris, 150mM NaCl, pH8.0, containing 0.01% sarcosyl and 5% trehalose.

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

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

**Predicted isoelectric point:** 6.7

**Predicted Molecular Mass:** 36.9kDa

**Accurate Molecular Mass:** 37kDa as determined by SDS-PAGE reducing conditions.

## **[ 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 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

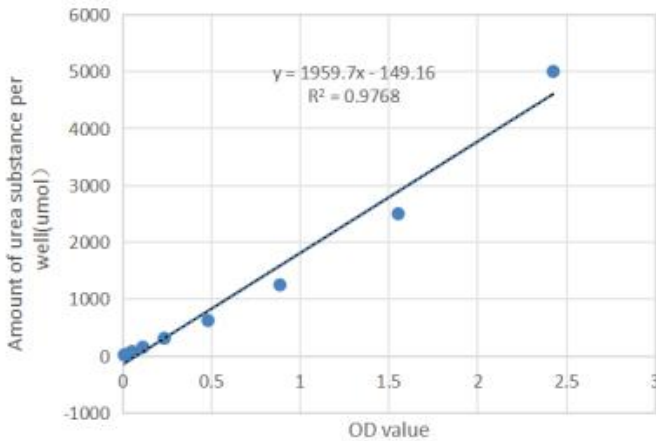
**Stability Test:** The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

## **[ SEQUENCE ]**

```
MSAKSRTIGI IGAPFSKGQP RGGVEEGPTV LRKAGLLEKL KEQECDVKDY
GDLPFADIPN DSPFQIVKNP RSVGKASEQL AGKVAEVKKN GRISLVLGGD
HSLAIGSISG HARVHPDLGV IWVDAHTDIN TPLTTTSGNL HGQPVSFLLK
ELKGKIPDVP GFSWVTPCIS AKDIVYIGLR DVDPGEHYIL KTLGIKYFSM
TEVDRLGIGK VMEETLSYLL GRKKRPIHLS FDVDGLDPSF TPATGTPVVG
GLTYREGLYI TEEIYKTGLL SGLDIMEVNP SLGKTPEEVT RTVNTAVAIT
LACFGLAREG NHKPIDYLNP PK
```

## **[ ACTIVITY ]**

Arginase (ARG) is a kind of inducible manganese (Mn<sup>2+</sup>)-containing enzymes that catalyse the final step of the urea cycle in the liver, converting L-arginine into L-ornithine and urea. Therefore, we can measure its bioactivity by enzyme activity assay. Recombinant human Arg was diluted to different concentrations in deionized water. Loading 40 µL of the rhARG1 and 10ul Substrate mixture (100 mM Arginine, 500 mM Glycine, 1.25 mM MnCl<sub>2</sub>, pH 10.5) into the plate. Incubated at 37 °C for 2 hours and stop the reaction with 200 µL stop solution of the 2 mM oPA, 2 mM NED, 50 mM Boric Acid, 1 M Sulfuric Acid, 0.03% Brij-35 (w/v). Cover the plate and incubate at room temperature for 20 minutes and read at 520 nm (absorbance) in endpoint mode. The specific activity of recombinant human ARG is >24400 pmol/min/ug.



OD Value	amount of urea per well(umol)
2.4247	5000
1.5516	2500
0.8855	1250
0.4804	625
0.234	312.5
0.1133	156.25
0.0527	78.125
0.0277	39.0625
0.008	19.53125

Figure 1. The standard curve of the amount of urea

$$\text{Specific Activity (pmol/min/}\mu\text{g)} = \frac{\text{Adjusted Urea Detected* (oD)}}{\text{Incubation time (min) x amount of enzyme (}\mu\text{g)}}$$

\*Derived from the urea standard curve using linear or 4-parameter fitting and adjusted for Substrate Blank

### [ IDENTIFICATION ]

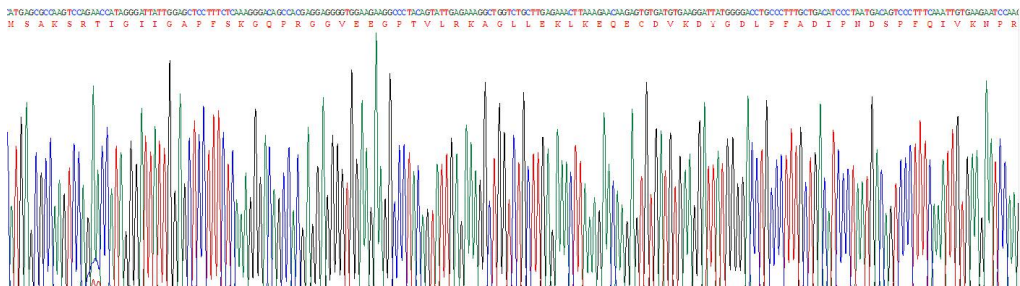
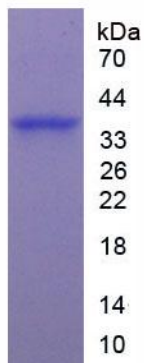


Figure 2. Gene Sequencing (extract)



**Figure 3. SDS-PAGE**

**Sample: Active recombinant Arg, 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.