

**APB332Hu01 100µg**  
**Active Ornithine Decarboxylase (ODC)**  
**Organism Species: *Homo sapiens* (Human)**  
***Instruction manual***

FOR RESEARCH USE ONLY  
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

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1st Edition (Apr, 2016)

## **[ PROPERTIES ]**

**Source:** Prokaryotic expression.

**Host:** *E. coli*

**Residues:** Asp15~Leu259

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

**Purity:** >92%

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

**Buffer Formulation:** 20mM Tris, 150mM NaCl, pH8.0, containing 0.05% 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:** 6.3

**Predicted Molecular Mass:** 27.9kDa

**Accurate Molecular Mass:** 28kDa 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.

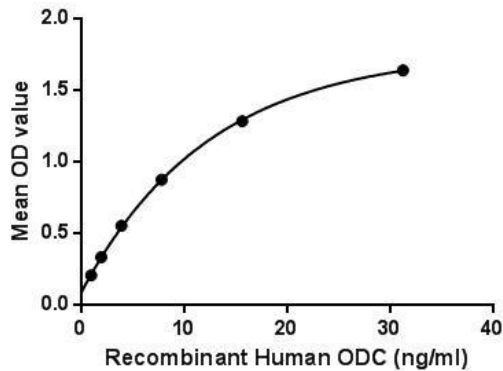
## **[ SEQUENCE ]**

```
                DEGFTA KDILDQKINE VSSDDKDAF YVADLGDILK
KHLRWLKALP  RVTPTYAVKC  NDSKAIVKTL  AATGTGFDCA  SKTEIQLVQS
LGVPPERIIY  ANPCKQVSQI  KYAANNGVQM  MTFDSEVELM  KVARAHPKAK
LVLRIATDDS  KAVCRLSVKF  GATLRTRSLL  LERAKELNID  VVGVSFHVGS
GCTDPETFVQ  AISDARCVFD  MGAEVGFSMY  LLDIGGGFPG  SEDVKLKFEI
ITGVINPAL
```

## **[ ACTIVITY ]**

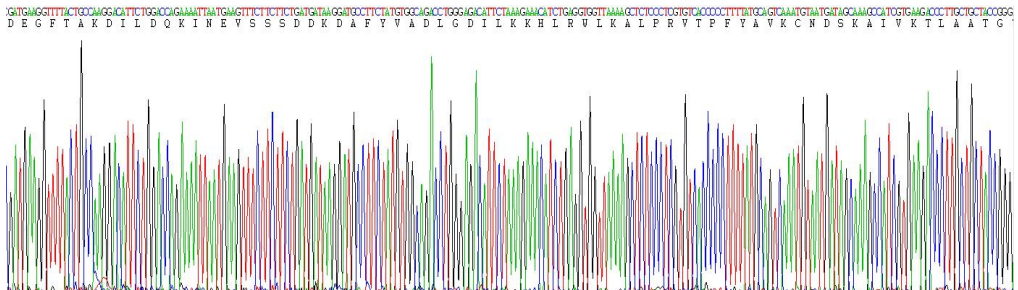
Ornithine decarboxylase (ODC) is an enzyme can catalyze the decarboxylation of ornithine (a product of the urea cycle) to form putrescine. The ornithine decarboxylation reaction catalyzed by ornithine decarboxylase is the first and committed step in the synthesis of polyamines, particularly putrescine, spermidine and spermine. Polyamines are important for stabilizing DNA structure, the DNA double strand-break repair pathway and as antioxidants. Therefore, ornithine decarboxylase is an essential enzyme for cell growth, producing the polyamines necessary to stabilize newly synthesized DNA. Lack of ODC causes cell apoptosis in embryonic mice, induced by DNA damage. Besides, Thymidine Kinase 1, Soluble (TK1) has been identified as an interactor of ODC, thus a binding ELISA assay was conducted to detect the interaction of recombinant human ODC and recombinant human TK1. Briefly, ODC were diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100µL were then transferred to TK1-coated microtiter wells and incubated for 2h at 37°C. Wells were washed with PBST and incubated for 1h with anti-ODC pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody, wells were aspirated and

washed 3 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 ODC and TK1 was shown in Figure 1, and this effect was in a dose dependent manner.

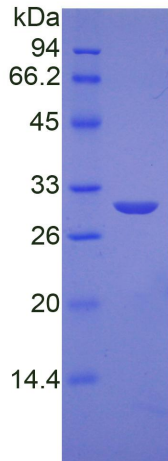


**Figure 1. The binding activity of ODC with TK1.**

## [ IDENTIFICATION ]

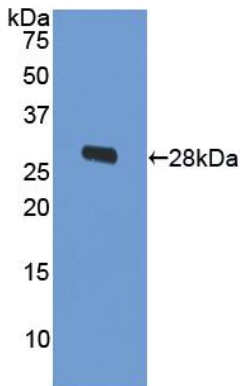


**Figure 2. Gene Sequencing (extract)**



**Figure 3. SDS-PAGE**

**Sample: Active recombinant ODC, Human**



**Figure 4. Western Blot**

**Sample: Recombinant ODC, Human;**

**Antibody: Rabbit Anti-Human ODC Ab (PAB332Hu01)**

### **[ IMPORTANT NOTE ]**

The kit is designed for in vitro and research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.