

**APA609Hu02 100µg**  
**Active Glutathione S Transferase Alpha 1 (GSTa1)**  
**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~Phe222

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

**Purity:** >90%

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

**Buffer Formulation:** PBS, pH7.4, containing 0.01% Sarcosyl, 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:** 9.3

**Predicted Molecular Mass:** 26.9kDa

**Accurate Molecular Mass:** 27kDa 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 ]**

```
MAEKPKLHYFNARGRMESTRWLLAAAGVEFEKFIKSAEDLDKLRNDGYLMFQQVPMVEIDGMKLVQTRAI  
LNYIASKYNLYGKDIKERALIDMYIEGIADLGEMILLPVCPEEKDAKLALIKEKIKNRYFFPAFEKVLKS  
HGQDYLVGNKLSRADIHLLVELLYVEELDSSLISSFPLLKALKTRISNLPTVKKFLQPGSPRKPPMDEKSL  
EEARKIFRF
```

## **[ ACTIVITY ]**

GSTa1 (Glutathione S-transferase a1) is an enzyme that plays an important role in detoxification by catalyzing the conjugation of many hydrophobic and electrophilic compounds with reduced glutathione. This subfamily of enzymes has a particular role in protecting cells from Reactive Oxygen Species and the products of peroxidation. Polymorphisms in this gene influence the ability of individuals to metabolize different drugs. GSTa1 catalyze the endogenous glutathione conjugation 1-Chloro-2,4-dinitrobenzene (CDNB), which can increase in the absorbance at 340 nm. The reaction was performed in adding 10  $\mu$ l 200 mM glutathione (reduced) and 10  $\mu$ l 100 mM CDNB in 980  $\mu$ l 100 mM NaH<sub>2</sub>PO<sub>4</sub> (pH7.0), rapidly mixed. Then add 50  $\mu$ l mixed substrates to 50  $\mu$ l different concentrations of recombinant human GSTa1, mix gently. Incubated at 37 °C for 5min, then read at a wavelength of 340 nm. The specific activity of recombinant human GSTa1 is >26000pmol/min/ug.

Specific Activity (pmol/min/ug)=

$\frac{\text{Adjusted } V_{\max}^* (\text{OD/min}) \times \text{well volume (L)} \times 10^{12} \text{ pmol/mol}}{\text{ext. coeff}^{**} (\text{M}^{-1}\text{cm}^{-1}) \times \text{path corr.}^{***} (\text{cm}) \times \text{amount of enzyme (ug)}}$

\*Adjusted for Substrate Blank

\*\*Using the extinction coefficient  $9600 \text{ M}^{-1}\text{cm}^{-1}$

\*\*\*Using the path correction 0.32 cm

## [ IDENTIFICATION ]

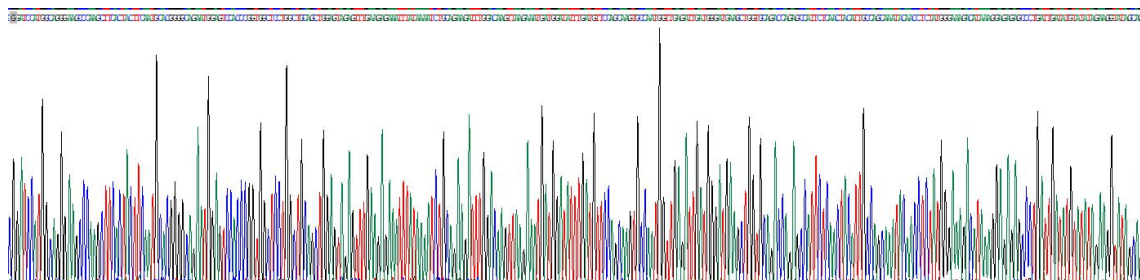


Figure 1. Gene Sequencing (extract)

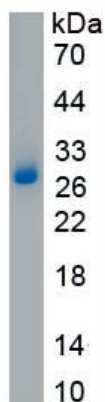


Figure 2. SDS-PAGE

Sample: Active recombinant GSTa1, 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.