APA609Hu01 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

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Ala2~Phe222
Tags: N-terminal His-tag
Purity: >95%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% SKL, 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: 8.9
Predicted Molecular Mass: 26.7kDa
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 2-8ºC 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]

AEKPKLHYF NARGRMESTR WLLAAAGVEF EEKFIKSAED LDKLRNDGYL
MFQQVPMVEI DGMKLVQTRA ILNYIASKYN LYGKDIKERA LIDMYIEGIA
DLGEMILLLP VCPPEEKDAK LALIKEKIKN RYFPAFEKVL KSHGQDYLVG
NKLSRADIHL VELLYYVEEL DSSLISSFPL LKALKTRISN LPTVKKFLQP
GSPRKPPMDE KSLEEARKIF RF

[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 μl 200 mM glutathione (reduced) and 10 μl 100 mM CDNB in 980 μl 100 mM NaH2PO4 (pH7.0), rapidly mixed. Then add 50 μl mixed substrates to 50 μl different concentrations of recombinant human GSTa1, mix gentliy. Incubated at 37℃ for 5min, then read at a wavelength of 340 nm. The specific activity of recombinant human GSTa1 is >17000 pmol/min/μg.

Specific Activity (pmol/min/ug)=

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

*Adjusted for Substrate Blank
**Using the extinction coefficient 9600 $M^{-1}cm^{-1}$
***Using the path correction 0.32 cm

[IDENTIFICATION]

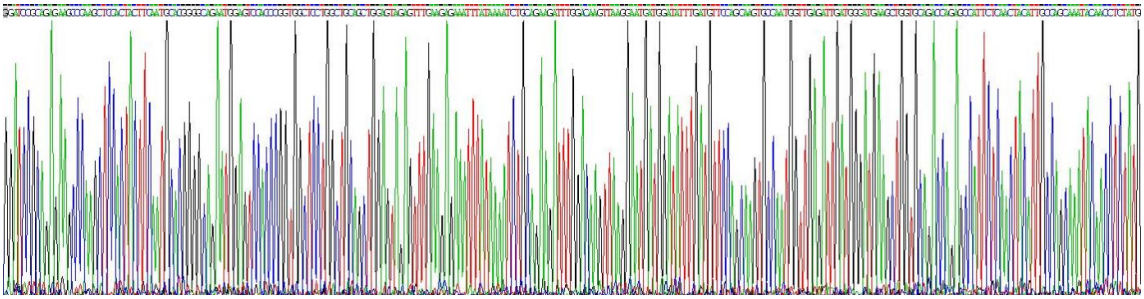

Figure 1. Gene Sequencing (extract)

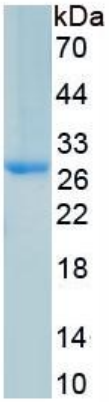

Figure 2. SDS-PAGE

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.