APC418Ra01 100μg
Active Catalase (CAT)
Organism Species: *Rattus norvegicus (Rat)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

1st Edition (Apr, 2016)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Asp3~Leu527
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.
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 7.5
Predicted Molecular Mass: 63.2kDa
Accurate Molecular Mass: 64kDa 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 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]

DSRDPASDQMKQWKEQRAPQKPDVLTTGGGNPIGDKLNIMTAGPRGPLLVQDVVFTDEMAHFDRERIPERVVHAKGAGAFGYFEVTHD
ITRYSKAKVFEHIGKRTPIAVRFSTVAGESGSADTVRDPRGFAVKFYTEDGNWDLVGNNTPIFFIRDAMLFPSFIHSQKRNPQTHLKD
PDMVWDFWSLCPESLHQVTFLFSDRGIPDGHRHMNGYGSHTFKLVNANGEAVYCKFHYKTDQGIKNLPVEEAGRLAQEDPDYGLRDLF
NAIASGNYPSWTFYIQVMTFKEAETFPFNPFDLTKVWPHKDYPLIPVGKLVLNRNPANYFAEVEQMAFDPSNMPPGIEPSPDKMLQGR
LFAYPDTHRHRLGPNYLQIPVNCPYRARVANYQRDGPMCMHDNQGGAPNYYPNSFSAPEQQGSALEHHSQCSADVKRFNSANEDNVTQ
VRTFYTKVLNEEERKRLCENIANHLKDAQLFIQRKAVKNFTDVHPDYGARVQALLDQYNSQKPKNAIHTYVQAGSHIAAKGKANL

[ACTIVITY]

Catalase (CAT) is an antioxidant enzyme present in all aerobic organisms. It is known to catalyze H_2O_2 into water and oxygen in an energy-efficient manner in the cells exposed to environmental stress. H_2O_2 will have specific absorbance at 240 nm . when we add CAT， the absorbance wil decrease, thus the activiy of CAT can be measured by caculating H_2O_2 absorbance decrease. The reaction was performed in adding 10ul (dilute with 50mM Potassium Phosphate Buffer, pH 7.0) recombinant Rat CAT to 290ul substrate mixture solution (50mM Potassium Phosphate Buffer, pH 7.0, 0.036% H_2O_2, allow the substrate to equilibrate to 25 °C), quickly mixed, then record the time required for the A240 to decrease from 0.45 to 0.40 absorbance units. One unit of catalase will decompose 1.0 μmole of H_2O_2 per minute at pH 7.0 at 25 °C. The activity of recombiant Rat CAT is 176000 U/mg.

Calculation

$$\text{CAT(U/mg)} = \frac{3.45 * d}{\text{time} * 0.1} \text{ / mg enzymatic}$$

Where:

3.45=corresponds to the decomposition of 3.45 μmoles of hydrogen peroxide in a 3.0 ml reaction mixture producing a decrease in the A240 from 0.45 to 0.40

d=dilution factor

Time=minutes required for the A240 to decrease from 0.45 to 0.40 absorbance units

0.1 = milliliter of enzyme added to the cuvette

[IDENTIFICATION]

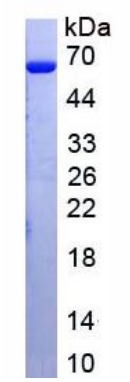

Figure 3. SDS-PAGE

Sample: Active recombinant CAT, Rat

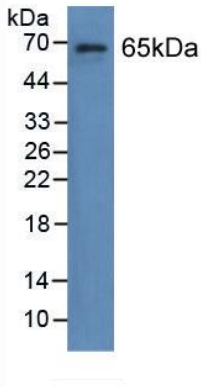

Figure 4. Western Blot

Sample: Recombinant CAT, Rat;

Antibody: Rabbit Anti- Rat CAT Ab (PAC418Ra01)

[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.