APC418Hu05 100μg
Active Catalase (CAT)
Organism Species: *Homo sapiens (Human)*
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: Asp10~Asn507
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% 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: 6.9
Predicted Molecular Mass: 60.4kDa
Accurate Molecular Mass: 60kDa 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.

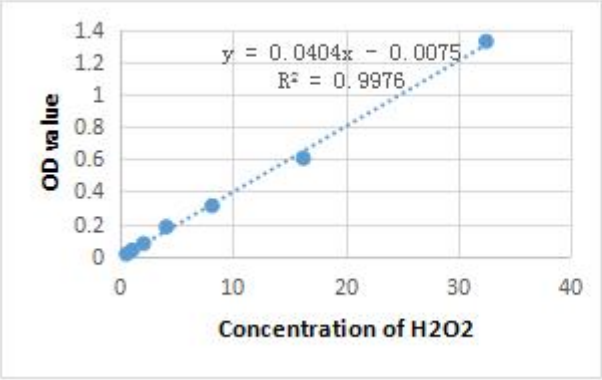
Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37ºC for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date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

[SEQUENCE]

D QMQHWKEQRA AQKADVLTTG AGNPVGDKLN VITVGPRGPL
LVQDVVFTDE MAHFDRERIP ERVVHAKGAG AFGYFEVTHD ITKYSKAKVF
EHIGKKTPIA VRFSTVAGES GSADTVRDPR GFAVKFYTED GNWDLVGNNT
PIFFIRDPIL FPSFIHSQKR NPQTHLKDPD MVWDFWSLRP ESLHQVSFLF
SDRGIPDGHR HMNGYGSHTF KLVNANGEAV YCKFHYKTDQ GIKNLSVEDA
ARLSQEDPDY GIRDLFNAIA TGKYPSWTFY IQVMTFNQAE TFPFNPFDLT
KVWPHKDYPL IPVGKLVLNR NPVNYFAEVE QIAFDPSNMP PGIEASPDKM
LQGRLFAYPD THRHRLGPNY LHIPVNCPYR ARVANYQRDG PMCMQDNQGG
APNYYPNSFG APEQQPSALE HSIQYSGEVR RFNTANDDNV TQVRAFYVNV
LNEEQRKRLC ENIAGHLKDA QIFIQKKAVK NFTEVHPDYG SHIQALLDKY
NAEKPKN

[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. As we know, H2O2 and (NH4)2MoO4 can produce a stable yellow product which has a absorbance at 405 nm. Thus, the recombinant human CAT activity was measured by its ability to hydrolyze H_2O_2 to H_2O , the remaining H_2O_2 in the reaction was measured by (NH4)2MoO4. The reaction was performed in 60 mM phosphate buffer pH 7.4 (Assay Buffer), initiated by addition 100 μL of various concentrations of CAT (diluted by Assay Buffer) to 1 mL of 65 mM Substrate H_2O_2 (diluted by Assay Buffer). Incubated at 37℃ for 1min, then add 1 ml 200 mM (NH4)2MoO4. After 10 minutes at room temperature, read at a wavelength of 405 nm.



Concentration of H_2O_2 (mM)	OD (405nm)
32.5	1.325
16.25	0.604
8.125	0.311
4.0625	0.181
2.03125	0.078
1.015625	0.038
0.5078125	0.013

Figure 1. The standard curve of H_2O_2

One unit of enzyme activity is defined as the 1μg of enzyme required to convert 1umol of H_2O_2 to H_2O in 1min at 37°C. The specific activity of recombinant human CAT is 53.8 umol/min/μg.

[IDENTIFICATION]

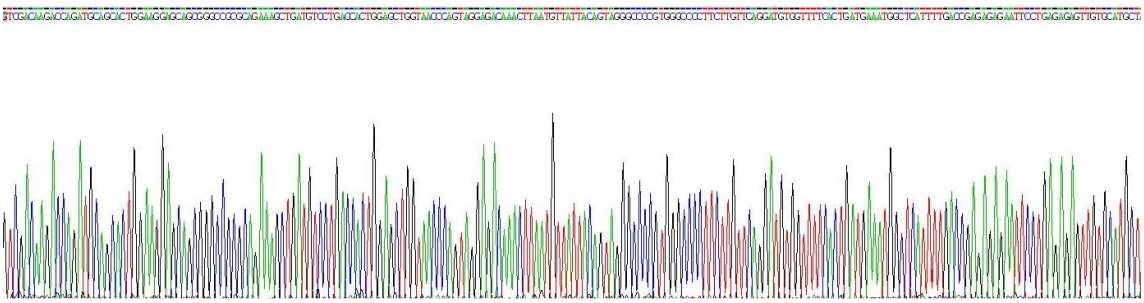


Figure 2. Gene Sequencing (extract)

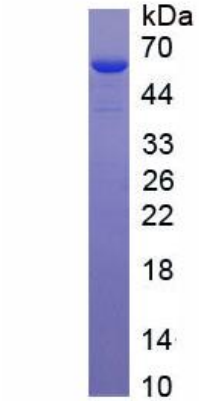


Figure 3. SDS-PAGE

Sample: Active recombinant CAT, Human

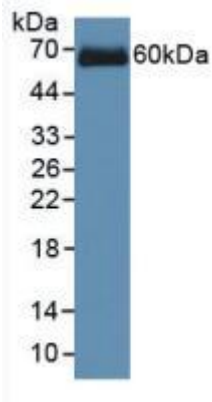


Figure 4. Western Blot

Sample: Recombinant CAT, Human;

Antibody: Rabbit Anti-Human CAT Ab (PAC418Hu05)

[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.