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AR50448PU-S Human Catalase (1-527, His-tag) - Purified

Alternate names: CAT, Peroxisome Marker

Quantity: 0.1 mg

Concentration: 1 mg/ml (determined by Bradford assay)

Background: CAT is a key antioxidant enzyme in the bodies defense against oxidative stress. Also, it is a heme enzyme that is present in the peroxisome of nearly all aerobic cells. CAT converts the reactive oxygen species hydrogen peroxide to water and oxygen and thereby mitigates the toxic effects of hydrogen peroxide.

Uniprot ID: P04040

NCBI: NP_001743

GeneID: 847

Species: Human

Source: E. coli

Format:
State: Liquid purified protein
Purity: >90% by SDS - PAGE
Buffer System: 20 mM Tris-HCl buffer (pH 8.0) containing 0.15M NaCl, 10% glycerol

Description: Recombinant human CAT protein, fused to His-tag at N-terminus, was expressed in E.coli and purified by using conventional chromatography techniques.
AA Sequence:
MGSSHHHHHH SSGLVPRGSH MADSRDPASD 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 NAEKPKNAIH TFVQSGSHLA
AREKANL
Specific Activity: >30,000 units/mg.
One unit will decompose 1.0 umole of H_2O_2 per minute at pH 8.0 at 25°C.
(Activity assay see "Protocols").
Molecular weight: 61.9 kDa (547aa)

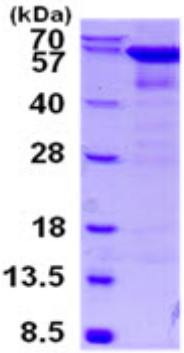
Storage: Store undiluted at 2-8°C for one week or (in aliquots) at -20°C to -80°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings: Freitas MO, et al. (2011) J Biol Chem. 2011 Nov 25;286(47):40509-19. Epub 2011 Oct 5.

Protocols: **Activity assay:**
1. Prepare an assay buffer with the following concentrations: 50 mM Potassium Phosphate (pH 8.0) and 0.15 % H_2O_2.
2. Load 150ul assay buffer into each well.

3. Add 50ul of recombinant CAT protein with 0.25ug, 0.125ug to each well.
4. Record the decrease in A260nm for 5 minutes at 25°C using UV plate.

Pictures:



15% SDS-PAGE (3ug)