APA117Hu62 100μg
Active Superoxide Dismutase 3, Extracellular (SOD3)
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: Eukaryotic expression.
Host: 293F cell
Residues: Trp19~Ala240
Tags: N-terminal His-tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 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: 6.3
Predicted Molecular Mass: 25.8kDa
Accurate Molecular Mass: 32kDa as determined by SDS-PAGE reducing conditions.
Phenomenon explanation:
The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[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]

WT GEDSAEPNSD SAEWIRDMYA KVTEIWQEVM
QRRDDDGALH AACQVQPSAT LDAAQPRVTG VVLFRQLAPR AKLDAFFALE
GFPTEPNSSS RAIHVHQFGD LSQGCESTGP HYNPLAVPHP QHPGDFGNFA
VRDGSLWRYR AGLAASLAGP HSIVGRAVVV HAGEDDLGRG GNQASVENGN
AGRRLACCVV GVCGPGLWER QAREHSERKK RRRESECKAA

[ACTIVITY]

Extracellular superoxide dismutase [Cu-Zn] is an enzyme that in humans is encoded by the SOD3 gene. This gene encodes a member of the superoxide dismutase (SOD) protein family. SODs are antioxidant enzymes that catalyze the dismutation of two superoxide radicals into hydrogen peroxide and oxygen. Acroding to the report, in a weakly alkaline buffer solution (pH=8.2) with N-tris(hydroxymethyl)amino methane-HCL, pyrogallol can occur autoxidation in the air, then SOD can inhibit this reaction. Thus, we use this way to measued the activity of recombinant human SOD3. The reaction was performed in adding 8 μl 5 mmol/L pyrogallol to 200 μl 50mmol/L Tris-HCl, rapidly mixing at 25 ℃, then read at 325 nm (using 50mmol/L Tris-HCl as blank control) in kinetic mode for 3 minutes using a microplate reader controlling the pyrogallol autoxidation rate at

0.70 OD/min. Different concentrations of recombinant human SOD3 were added into 200 μl 50 mmol/L Tris-HCl, incubated for 20 min at 25 ℃, then adding 8 μl 5 mmol/L pyrogallol to each well, rapidly mixing and read at 325 nm in kinetic mode for 3 minutes. Under these conditions, the enzyme amount of 50% inhibition of pyrogallol autooxidation per minute is defined as a unit. The specific activity of recombinant human SOD3 is 846.6 U/mg.

Calculation

$$\text{SOD3 activity (U/mg)} = \frac{\frac{0.070 - A325/\text{min}}{0.070} \times 100\%}{50\%} / M$$

Where:

0.070=pyrogallol autoxidation rate
A325/min= inhibition pyrogallol autoxidation rate of SOD3
M=mass of enzyme

[IDENTIFICATION]

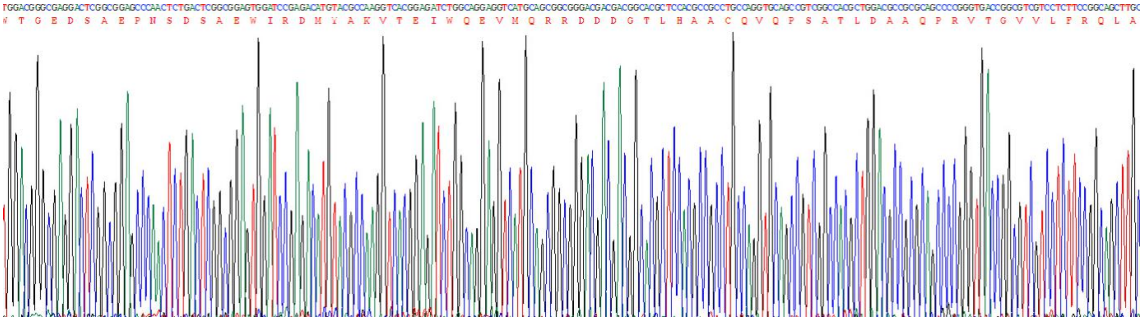

Figure 1. Gene Sequencing (extract)

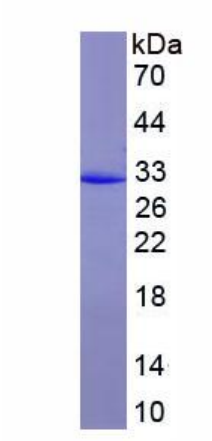

Figure 2. SDS-PAGE

Sample: Active recombinant SOD3, 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.