

Peroxiredoxin 3, 63-256 aa, Human, Recombinant, *E.coli*

Cat. No. IBATGP0321

Full name: Thioredoxin-dependent peroxide reductase, mitochondrial **NCBI Accession No.:** NP_006784

Synonyms: PRDX3, PRX III, Antioxidant protein 1 (AOP-1)

Description: Peroxiredoxin 3, also known as PRDX3, is a member of the peroxiredoxin family of antioxidant enzymes, which reduce hydrogen peroxide and alkyl hydroperoxides. Peroxiredoxin 3 is specifically localized in mitochondria and believed to play important roles in the regulation of cellular redox status by serving as a primary line of defense against H₂O₂ produced during respiration. Recombinant human Peroxiredoxin 3 protein was expressed in *E.coli* and purified by using conventional chromatography techniques.

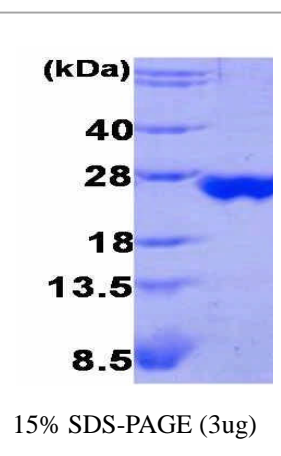
Form: Liquid. In 20 mM Tris-HCl buffer (pH8.0) containing 10% glycerol

Molecular Weight: 21.5 kDa (195aa), confirmed by MALDI-TOF

Purity: > 95% by SDS - PAGE

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

Biological activity: Specific activity: approximately 82-83 pmole/min/μg.
Enzymatic activity was confirmed by measuring the remaining peroxide after incubation of PRDX3 and peroxide for 20 min at room temperature. Specific activity is defined as the amount of hydroperoxide that 1ug of enzyme can reduce at 25 C for 1 minute.



Activity Assay

1. Prepare a 50ul reaction mix into a suitable container :
The final concentrations are 1mM DTT, 0.03X PBS, 0.5% glycerol.
2. Add 5 ul of recombinant PRDX3 solution with various concentrations (0.25ug, 0.5ug) in 45 ul reaction buffer.
3. Incubate at 25C for 2 minutes.
4. Add 5ul of 5 mM H₂O₂ as a substrate and incubate the mixture for 20 min.
5. Add 20ul of 26 % trichloroacetic acid (TCA) to stop the reaction.
6. Add 30ul of Formation solution (10mM Ferrous ammonium sulfate (Fe(II)(NH₄)₂(SO₄)₂), 2.5M KSCN)
7. Record the increase in A475nm.

Sequences of amino acids:

MPAVTQHAPY FKGTAVVNGE FKDLSLDDFK GKYLVLFFYP LDFTFVCPT E IVAFSDKANE FHDVNCVVA VSVDSHFSHL AWINTPRKNG
GLGHMNIALL SDLTQISR D YGVLLGSG L ALRGLFIIDP NGVIKHL SVN DLPVGRSVEE TLRIVKAFQY VETHGEVCPA NWT PDSPTIK
PSPAASKEYF QKVNQ

General references:

Cox AG., *et al.* (2009). *Biochemistry*. **48**(27):6495-501
Rhee SG., *et al.* (2005). *Free Radic Biol Med*. **38**(12):1543-52

Storage: Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles.

For research use only. This product is not intended or approved for human, diagnostics or veterinary use.



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