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ProductInformation

Peroxiredoxin 1,
Human, recombinant

Product Code **P 8986**
Storage Temperature –20 °C

Product Description

Peroxiredoxin 1 is a human recombinant protein, which is expressed in *E.coli* as an active enzyme. The enzyme has two cysteine residues, which correspond to Cys 47 and Cys 70 of yeast thioredoxin peroxidase (TPx).

Peroxiredoxins, antioxidant enzymes, constitute a novel defined family of peroxidases with a molecular weight of approximately 25 kDa. Peroxiredoxins reduce H_2O_2 and alkyl hydroperoxides using primarily the thioredoxin (Trx) system (Trx, thioredoxin reductase, and NADPH) as the source of electrons.[1] The peroxiredoxin family includes more than 30 proteins from organisms of all kingdoms.[2,3,4]

Peroxiredoxin 1 belongs to the Type I Peroxiredoxin family. This family consists of human natural killer cell enhancing factor (NKEFA), human proliferation associated gene (PAG), mouse macrophage stress induced protein (MSP23), mouse osteoblast specific factor (OSF-3), and rat heme-binding protein (HBP23). These proteins are approximately 95% homologous.[5]

The product is lyophilized from HEPES buffer, pH 7.0, containing trehalose as a stabilizer.

Purity: Minimum 85% (SDS-PAGE).

The product has been shown to catalyze NADPH oxidation in the thioredoxin-thioredoxin reductase system.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitution of the contents of a vial with 1 ml of deionized water results in a solution containing the protein in 50 mM Hepes, pH 7.0, and 5% trehalose. Store the reconstituted solution at –20 °C.

Storage/Stability

The product ships on wet ice and storage at –20 °C with desiccation is recommended.

References

1. Chae, H.Z., Method Enzymol., **300**, 219-227 (1999).
2. Chae, H.Z., et al., Proc. Natl. Acad. Sci**,** USA**, 91**, 7017-7021 (1994)..
3. Chae, H.Z., et al., J. Biol.Chem., **269**, 27670 (1994).
4. Rhee, S.G., et al., Biofactors, **10**, 207-209 (1999).
5. Chae, H.Z., Proceedings of 3rd Internet World Congress on Biomedical Sciences. 12.9-20 (Riken, Tsukuba, Japan: 1996).

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