

Product Information

Anti-Peroxiredoxin 3

produced in rabbit, IgG fraction of antiserum

Catalog Number **P1247**

Synonym: Anti- PRDX3

Product Description

Anti-Peroxiredoxin 3 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 241-256 of human PRDX3, conjugated to KLH via an N-terminal lysine residue. Whole antiserum is purified to provide an IgG fraction of antiserum

Anti-Peroxiredoxin 3 recognizes human PRDX3 by immunoblotting, ~25 kDa. Staining of the PRDX3 band in immunoblotting is specifically inhibited by the PRDX3 immunizing peptide.

Living organisms produce reactive oxygen species such as H_2O_2 during physiological processes, and in response to external stimuli such as UV radiation. In order to protect themselves against oxidative attacks, but also to maintain a redox balance in their different subcellular compartments, cells have evolved complex mechanisms.^{1,2} Oxidants and antioxidants represent a set of signaling molecules that modify function through redox. Biologically relevant oxidants, e.g. hydrogen peroxide and nitric oxide, that serve as pleiotropic signaling molecules have been well documented.³ Antioxidants govern the intracellular redox status by balancing these oxidants. These include glutathione, thioredoxin, and glutaredoxin. Thioredoxin reductase (TR), thioredoxin (Trx), and thioredoxin peroxidase (Tpx) are three linked components in a redox chain that couples peroxide reduction to NADPH oxidation.⁴⁻⁶

PRDX3, also known as AOP1, MER-5, or SP-22, belongs to a family of proteins termed peroxiredoxins (Prx), which catalyze the reduction of peroxides in the presence of thioredoxin.⁷ More than 40 members of the Prx family have been identified in a wide variety of organisms ranging from prokaryotes to mammals.⁸ The Prx family has been identified in association with a variety of diverse cellular functions including growth control, proliferation, differentiation, and in the response to oxidative stress. Human peroxiredoxins share 60-80% identity to each other and more than 90% identity with the corresponding mouse homologues.

Although PRDX3 was originally cloned as a gene expressed during the differentiation of murine erythroleukemia cells, it was subsequently shown to be a mitochondrial protein that possesses peroxide reductase activity.⁷⁻⁹ PRDX3 is required to maintain normal mitochondrial function through direct activation by c-Myc, which may explain its overexpression during neoplastic transformation.⁹

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in frost-free freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody dilution of 1:4,000-1:8,000 is recommended using HeLa cell mitochondria extracts.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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MG,KAA,PHC 06/10-1

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