

## 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<sub>2</sub>O<sub>2</sub> 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.<sup>1, 2</sup> 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.<sup>3</sup> 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.<sup>4-6</sup>

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.<sup>7</sup> More than 40 members of the Prx family have been identified in a wide variety of organisms ranging from prokaryotes to mammals.<sup>8</sup> 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.<sup>7-9</sup> PRDX3 is required to maintain normal mitochondrial function through direct activation by c-Myc, which may explain its overexpression during neoplastic transformation.<sup>9</sup>

#### 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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4. Kang, S.W., et al., *J. Biol. Chem.*, **273**, 6303-6311 (1998).
5. Kwon, Y.W., et al., *Biol. Chem.*, **384**, 991-996 (2003).
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MG,KAA,PHC 06/10-1