

## Product Information

### Anti-Peroxiredoxin 6 (N-terminal)

produced in rabbit, affinity isolated antibody

Product Number **P0050**

#### Product Description

Anti-Peroxiredoxin 6 (N-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence at N-terminal of human peroxiredoxin 6 (GenelD: 9588), conjugated to KLH. The corresponding sequence differs by one amino acid in mouse and two amino acids in rat. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Peroxiredoxin 6 (N-terminal) recognizes human, rat, and mouse peroxiredoxin 6 (not tested in other species). The antibody can be used in several immunochemical techniques including immunoblotting (~25 kDa) and immunoprecipitation. Detection of the peroxiredoxin 6 band by immunoblotting is specifically inhibited by the immunizing peptide. A non-specific band at ~43 kDa may be detected in some extract preparations.

Peroxiredoxin 6, also named 1-Cys peroxiredoxin, is a member of the thiol-specific antioxidant peroxiredoxin family.<sup>1</sup> Peroxiredoxins are peroxidases that reduce hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and alkyl hydroperoxides to water and alcohol, respectively, with the use of reducing equivalents provided by thiol-containing proteins.<sup>2</sup> Six mammalian peroxiredoxins have been identified. Peroxiredoxin 6 is the only one that contains a single redox-active cysteine and uses glutathione to catalyze the reduction of H<sub>2</sub>O<sub>2</sub> and other organic peroxides.<sup>1,3</sup> It is expressed in all tissues with the highest levels in the lung.<sup>4</sup> Peroxiredoxin 6 is a bifunctional enzyme with peroxidase and phospholipase A<sub>2</sub> activities.<sup>5</sup> Overexpression of peroxiredoxin 6 in cells protects them against oxidative damage, whereas knockdown of this enzyme results in oxidative stress and apoptosis.<sup>6</sup> The phospholipase A<sub>2</sub> activity plays an important role in surfactant homeostasis.<sup>4</sup> Therefore, peroxiredoxin 6 is a major antioxidant enzyme which functions in antioxidant defense and lung phospholipid metabolism.<sup>6-8</sup>

#### Reagent

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

Antibody concentration: ~1.0 mg/mL

#### Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the 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 concentration of 2-5 µg/mL is recommended using a whole extract of human HeLa cells.

**Immunoblotting:** a working antibody concentration of 5-10 µg/mL is recommended using a whole extract of rat liver.

**Immunoprecipitation:** a working antibody amount of 5-10 µg is recommended using a lysate of mouse brain.

**Note:** In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

## References

1. Kang, S.W. et al., *J. Biol. Chem.*, **273**, 6303-6311 (1998).
2. Woo, H.A. et al., *J. Biol. Chem.*, **278**, 47361-47364 (2003).
3. Fisher, A.B. et al., *J. Biol. Chem.*, **274**, 21326-21334 (1999).
4. Schremmer, B. et al., *Subcell. Biochem.*, **44**, 317-344 (2007).
5. Chen, J.W. et al., *J. Biol. Chem.*, **275**, 28421-28427 (2000).
6. Manevich, Y., and Fisher, A.B., *Free Radic. Biol. Med.*, **38**, 1422-1432 (2005).
7. Kumin, A. et al., *Am. J. Pathol.*, **169**, 1194-1205 (2006).
8. Power, J.H.T. et al., *Acta Neuropathol.*, **115**, 611-622 (2008).

VS,ST,KAA,TD,PHC,MAM 03/19-1