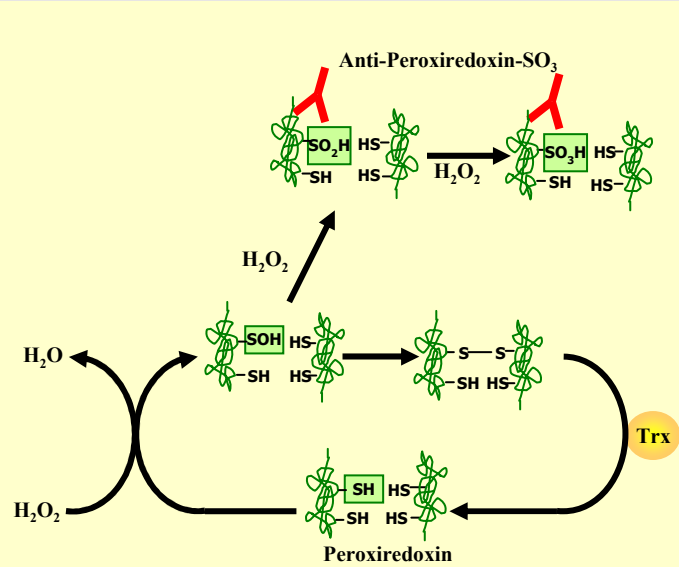
Catalog No. LF-MA0088

MONOCLONAL ANTIBODY

Anti-Peroxiredoxin-SO_3 (10A1)

Background : Peroxiredoxin(Prx) is an antioxidant enzyme detoxifying reactive oxygen species and has a cysteine at their active site. Prx enzymes modulate various receptor signaling pathways and protect cells from oxidatively induced death. Prx I to IV have two conserved Cys residues corresponding to Cys^{51} and Cys^{172} of mammalian Prx I. The active site cysteine(Cys^{51}) is oxidized to cysteine sulfenic acid(Cys^{51}-SOH) when a peroxide is reduced. Because Cys^{51}-SOH is unstable, it forms a disulfide with Cys^{172}-SH which comes from other subunit of the homodimer. The disulfide is then reduced back to the Prx active thiol form by the thioredoxin-thioredoxin reductase system. However, the formation of the disulfide is a slow process. Thus under oxidative stress condition, the sulfenic intermediate(Cys^{51}-SOH) can be easily overoxidized to cysteine sulfinic acid(Cys-SO_2H) or cysteine sulfonic acid(Cys-SO_3H) before it is able to form a disulfide. Recent studies suggest that overoxidized Prx can be reduced back to the active form during recovery after oxidative stress. Anti-Prx-SO_3 antibody recognizes both sulfinic and sulfonic forms of Prx and detects overoxidized Prx enzymes in H_2O_2-treated cells with high sensitivity and specificity.

Immunogen : Sulfonylated peptide(KLH coupled) corresponding to the active site sequence common to mammalian Prx I to IV



Species cross reactivity		
Human	**Mouse**	**Rat**
+	NT	NT

Host : Mouse

Isotype : IgG1, k

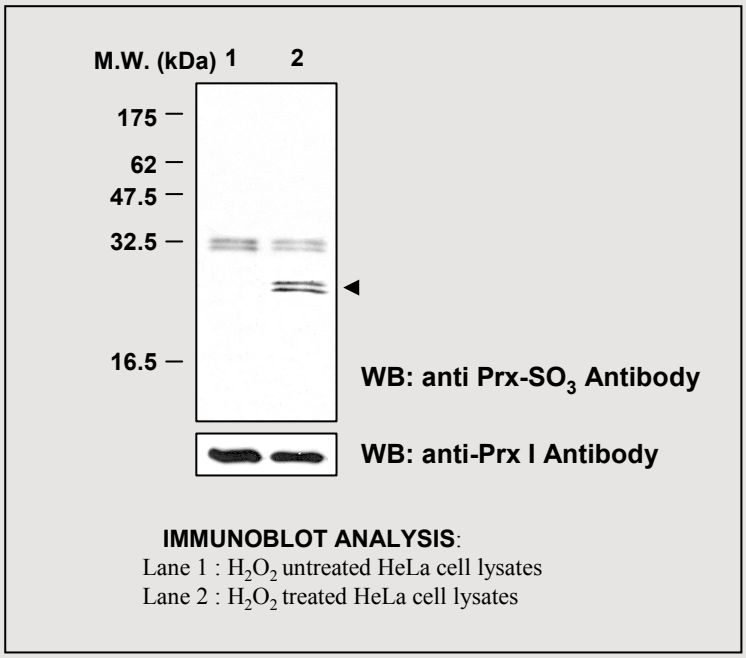
Clone number : 10A1

Composition : PBS containing 50% glycerol

Specificity : Sulfinic and sulfonic form of Prx I to IV

Size : 100ul

Storage : Store for 1 year at -20°C from date of shipment



IMMUNOBLOT ANALYSIS:
Lane 1 : H_2O_2 untreated HeLa cell lysates
Lane 2 : H_2O_2 treated HeLa cell lysates

Applications :

Western blotting (1:100-500)

Background Reference :

(1) Woo H.A., et al. (2003) *J. Biol. Chem.* **278**(48):47361-47364
(2) Woo H.A., et al. (2003) *Science*, **300**:653-656
(3) Chevallet M., et al. (2003) *J. Biol. Chem.***278**(39): 37146-37153
(4) Angelika Tolle, et al.(2005) *Free Radic Biol Med*.**38**:1401-1408
(5) James W. Baty, et al.(2005) *Biochem. J* 3 Mar Published
(6) Min Hee Choi et al. (2005) *Nature letters* **435**(19): 347-353

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