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# Peroxiredoxin 6 in the repair of peroxidized cell membranes and cell signaling

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**Running Title:** Peroxiredoxin 6

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**Highlights:**

- **Prdx6 expresses peroxidase, phospholipase $A_2$, and lysophosphatidylcholine acyl transferase activities;**
- **Peroxidase activity of Prdx6 can reduce phospholipid hydroperoxides as well as $H_2O_2$;**
- **Reduction and resolution of oxidized Prdx6 is mediated by GSH catalyzed by GSH S-transferase π;**
- **Prdx6 can: a) reduce or b) hydrolyze and reacylate peroxidized phospholipids making it a complete enzyme for repair of peroxidized cell membranes;**
- **Prdx6 participates in the synthesis and degradation of cellular phospholipids;**
- **Prdx6 generates the lysophosphatidic acid that results in mobilization of *rac* in the pathway for activation of NADPH oxidase (type 2).**