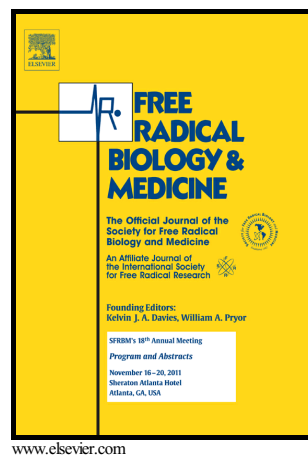


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Redox Regulation of the Tumor Suppressor PTEN by the Thioredoxin**System and Cumene Hydroperoxide**

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ABSTRACT

Intracellular redox status influences the oxidation and enzyme activity of the tumor suppressor phosphatase and tensin homolog on chromosome 10 (PTEN). Cumene hydroperoxide (CuHP), an organic hydroperoxide, is a known tumor promoter. However, molecular targets and action mechanism of CuHP in tumor promotion have not been well characterized. In this study, we investigated the effect of CuHP on the redox state of PTEN in HeLa cells. In addition, the intracellular reducing system of oxidized PTEN was analyzed by using a biochemical approach and the effect of CuHP on this reducing system was also analyzed. While PTEN oxidized by hydrogen peroxide is progressively converted to its

¹ These authors contributed equally to this work.

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