# Marchantin H as a natural antioxidant and free radical scavenger

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## 摘要

## Abstract

The antioxidant activity of marchantin H was investigated using various experimental models. Marchantin H inhibited nonenzymatic iron-induced lipid peroxidation in rat brain homogenates with an IC50value of 0.51 ± 0.03 μ . It was more potent than desferrioxamine or other classical antioxidants. Marchantin H also suppressed NADPH-dependent microsomal lipid peroxidation with an IC50value of 0.32 ± 0.01 μ without affecting microsomal electron transport of NADPH – cytochrome P450 reductase. Marchantin H could scavenge the stable free radical 1,1-diphenyl-2-picrylhydrazyl and peroxyl radical derived from 2,2´-azobis(2-amidinopropane) dihydrochloride in aqueous phase, but not the peroxyl radical derived from 2,2´-azobis(2,4-dimethylvaleronitrile) in hexane. The oxygen consumption during peroxyl radical-induced human erythrocyte ghost oxidation was decreased in a concentration-dependent manner by marchantin H. Furthermore, it was reactive toward superoxide anion generated by the xanthine/xanthine oxidase system. On the other hand, marchantin H inhibited copper-catalyzed oxidation of human low-density lipoprotein, as measured by fluorescence intensity, thiobarbituric acid-reactive substance formation, and electrophoretic mobility in a concentration-dependent manner. Our results indicate that marchantin H is a potentially effective and versatile antioxidant and can be used as a chaperone protecting biomacromolecules against peroxidative damage.