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Effects of Mulberry (*Morus alba* L.) Leaf Extract on Oxygen Radicals and Their Scavenger Enzymes in Liver of SD Rats

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This study was designed to investigate the effects of mulberry (*Morus alba* L.) leaf extract (MLE) on oxygen radicals and their scavenger enzymes in liver membranes of rats. Sprague-Dawley (SD) male rats (160 ± 10 g) were fed basic diet (control group), and experimental diets (MLE-100 and MLE-300 groups) added 100 and 300 mg/kg BW/day for 6 weeks. Hydroxyl radical ($\cdot\text{OH}$) levels resulted in a significant decreases (15.2% and 18.1%, 5.6% and 8.0%, respectively) in liver mitochondria and microsome of MLE-100 and MLE-300 groups compared with control group, but significant difference between liver microsomes could be not obtained. These are no significant differences in superoxide radical ($\text{O}_2^{\cdot-}$) levels of liver cytosol in MLE-100 and MLE-300 groups compared with control group. Lipid peroxide (LPO) levels were slightly decreased about 13.6% and 6.1% in liver mitochondria and microsomes of MLE-300 group compared with control group. Oxidized protein (OP) levels were remarkably decreased about 16.9% and 27.2% in liver microsomes only of MLE-100 and MLE-300 groups compared with control group.

Mn-SOD activities in liver mitochondria were remarkably increased (18.2% and 28.7%, respectively) in MLE-100 and MLE-300 groups, and Cu,Zn-SOD activities in liver cytosol were also significantly increased (11.3% and 20.2%, respectively) in MLE-100 and MLE-300 groups compared with control group, but significant difference between GSHPx activities in liver cytosol could be not obtained. These results suggest that anti-aging effect of mulberry leaf extract (MLE) may play a pivotal role in attenuating a various age-related changes.