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## Effects of Silk Fibroin 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 silk fibroin (Mw 500) powder (SFP) on oxygen radicals and their scavenger enzymes in liver membranes of rats. Sprague-Dawley (SD) male rats ( $160 \pm 10$ g) were fed basic diet (control group), and experimental diets (SFP-2.5 and SFP-5.0 groups) added 2.5 and 5.0g/kg BW/day for 6 weeks. Hydroxyl radical ( $\cdot\text{OH}$ ) levels resulted in a considerable decreases (5.8% and 8.4%, 3.7% and 11.1%, respectively) in liver mitochondria and microsomes of SFP-2.5 and SFP-5.0 groups compared with control group, and  $\text{O}_2^{\cdot-}$  radical level was remarkably decreased about 15% and 20% in liver cytosol of SFP-2.5 and SFP-5.0 groups compared with control group. Lipid peroxide (LPO) levels were significantly decreased (8.3% and 18.0%, 13.4% and 18.4%, respectively) in liver mitochondria and microsomes of SFP-2.5 and SFP-5.0 groups compared with control group. Oxidized protein (OP) levels were remarkably decreased about 19.0% and 24.4% in liver microsomes of SFP-2.5 and SFP-5.0 groups, but significantly decreased about 11.6% in liver mitochondria of SFP-5.0 group compared with control group. Mn-SOD activities were remarkably increased (17.6% and 28.8%, respectively) in mitochondria of SFP-2.5 and SFP-5.0 groups, and Cu,Zn-SOD activities were also effectively increased (6.0% and 14.4%, respectively) in liver cytosol of SFP-2.5 and SFP-5.0 groups, but significant difference between GSHPx activity in liver cytosol of these two groups could be not obtained. These results suggest that anti-aging effect of silk fibroin may play an effective anti-aging role in a attenuating a oxidative stress and increasing a scavenger enzyme activity in liver membranes.