

P6

## Studies on the hepatoprotective and antioxidative effects of chondroitin sulfate

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The hepatoprotective and antioxidative effect of chondroitin sulfate (100mg/kg) were investigated at the bioactive levels of liver-total homogenates and sera. In this study, we used the CCl<sub>4</sub>-Induced hepatotoxic rats and the ovariectomized-aging rats.

We were carried out the hepatotoxic study from the saline-treated group (CON), the CCl<sub>4</sub> -treated group (CCl<sub>4</sub>), the chondroitin sulfate group before CCl<sub>4</sub> injection (CS + CCl<sub>4</sub>) and the Gravia group before CCl<sub>4</sub> injection (Gravia + CCl<sub>4</sub>), while we were worked out the aging study from the saline-treated group (Sham), the saline-treated group after ovariectomy (OVx) and the chondroitin sulfate group after ovariectomy (OVx + CS).

CS + CCl<sub>4</sub> and Gravia + CCl<sub>4</sub> groups showed the remarkably increased bioactivity in serum and liver compared to CCl<sub>4</sub> group. And OVx + CS group decreased the level of lipidperoxide than OVx.

As the results of the measurement of SOD, catalase and GPx which are antioxidative enzyme, SOD and Catalase activities in OVx group were much higher than in sham group. But they were significantly decreased in OVx + CS group.

Based on the results, it is supposed that chondroitin sulfate can enhance bioactivity. Also, it is thought that Chondroitin sulfate can inhibit aging.