



## Damaging effects of water-borne cadmium chloride on DNA of lung cells of immature mice

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**ABSTRACT.** We investigated the effects of cadmium on lung cell DNA in immature mice. The mice were randomly divided into four groups: control group, low-dose group (1/100 LD<sub>50</sub>), middle-dose group (1/50 LD<sub>50</sub>), and high-dose group (1/25 LD<sub>50</sub>); they were supplied with cadmium chloride or control water for 40 days. Lung cells collected from sacrificed mice were used to evaluate the extent of DNA damage by comet assay. The ratio of tailing cells, DNA tail length, DNA comet length, DNA tail moment, DNA olive tail moment, and percentage of DNA in the comet tail were measured. The rate of tailing lung cells exposed to cadmium increased significantly; the low-concentration group had significantly ( $P < 0.05$ ) higher rates, and the middle- and high-concentration groups had higher ( $P < 0.01$ ) rates compared to the control. DNA tail length, DNA comet length, DNA tail moment, and DNA olive tail moment all increased with the increase in cadmium doses, but compared with those of the control group, no significant differences in low-dose group were found ( $P > 0.05$ ), and the differences in middle- and high-dose groups were all highly significant ( $P < 0.01$ ). The degree of DNA damage also increased with the increase of the cadmium concentrations. We conclude that cadmium significantly increases DNA

damage in lung cells of immature mice in a dose-dependent manner.

**Key words:** Cadmium; DNA damage; Mice; Comet assay