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Effects of montmorillonite on alleviating dietary Cd-induced oxidative damage in carp (*Carassius auratus*).

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Abstract

The present study was designed to investigate the effects of montmorillonite (MMT) on dietary Cd-induced oxidative damage in liver and kidney of carp (*Carassius auratus*). One hundred eighty carp were randomly divided into four groups and fed with a basal diet, a basal diet supplemented with 0.5% MMT, Cd-contaminated basal diet (120 mg Cd/kg dry weight) and Cd-contaminated basal diet supplemented with 0.5% MMT, respectively. After 60 days, fish were sacrificed to measure malondialdehyde (MDA) content and antioxidative indices in liver and kidney. The results showed that the exposure of carp to dietary Cd caused decreases in glutathione peroxidase activity, catalase activity, superoxide dismutase activity, glutathione content and total antioxidant capacity level, while MMT supplemented in diet compensated Cd-induced decreases in above antioxidant indices to some extent in liver and kidney. As compared with the control group, increases in MDA content were observed in both measured tissues of carp exposed to dietary Cd, while MDA content decreased in carp exposed to Cd-contaminated basal diet supplemented with MMT in comparison with the Cd-contaminated group. It was suggested that MMT, when co-administered with Cd in diet, could alleviate dietary Cd-induced oxidative damage in liver and kidney of carp.

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