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Acute oral toxicity and genotoxicity of polysaccharide fraction from the leaves of *Diospyros kaki* thumb

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Polysaccharides separated from natural sources have been regarded as important immune stimulant candidates due to their broad spectrum of immune stimulatory activities. In a previous study, we isolated and characterized polysaccharides from the leaves of *Diospyros kaki* (PLE0) prepared by pectinase digestion. PLE0 exhibited immune stimulatory effects through enhanced lymphocyte proliferation, natural killer (NK) cell cytotoxicity against tumor cells, and anti-complementary activity. To obtain safety information for PLE0, its acute oral toxicity and genotoxicity were evaluated in this study. Acute oral toxicity test of PLE0 was performed in Sprague-Dawley rats. In acute oral toxicity test, PLE0 exhibited no mortality, body weight and behavioral changes and adverse effects in male and female rats up to 5,000 mg/kg dose. To evaluate genotoxicity of PLE0, we tested bacterial reverse mutation test, comet assay, and chromosomal aberration test. PLE0 did not significantly increase the number of the bacterial revertant colonies in bacterial reverse mutation test. Moreover, PLE0 related DNA damage and chromosomal aberration was not observed in CHO-k1 cells. These results suggested that the approximate lethal dose of PLE0 is considered to be higher than 5,000 mg/kg, and PLE0 does not act as a mutagenic or genotoxic material at the concentrations evaluated.

Biography

Chang-Won Cho received his PhD from Korea University in Republic of Korea. He is a Senior Researcher of Korea Food Research Institute (KFRI). His major research area is development of bioactive food materials through various processing technologies including bioconversion. He is also an expert on biological activity measurement and component analysis of natural products. He has published more than 70 papers in reputed journals.

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