

제 목	Preventive Effect of Chitosan on Cytotoxicity of Cadmium to Cultured Mouse Primary Fibroblast Cells and L929 Cell Lines
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Abstract	<p>The mouse primary fibroblast cells and L929 cell line were used to evaluate the cytotoxicity of CdCl₂ and preventive effect by chitosan. The cytotoxicity was assayed by the neutral red(NR), MTT, sulforhodamin B(SRB), cell proliferation, released lactic acid dehydrogenase(LDH), glutathione content, total protein, micronucleus test and microscopic studies.</p> <p>As determined with the neutral red(NR) and MTT cytotoxicity assays, the 24-h midpoint(NR50; MCV conc.) toxicity values, which were 0.05mM for cadmium chloride.</p> <p>Damage to the integrity of the plasma membrane was evident, as leakage of lactic acid dehydrogenase occurred during a 4-h exposure to 0.05 mM CdCl₂, but they showed less leakage of LDH in the existence of 0.05 mM CdCl₂ mixed with chitosan.</p> <p>The generation of reactive free radicals from 0.05 mM CdCl₂ was suggested by the following; the intracellular content of glutathione, lipid peroxidation. The amount of total protein and SRB absorbance treated cadmium alone was less than that of combination with chitosan. Frequency of micronuclei treated cadmium alone was more than that of combination with chitosan. Light microscopy revealed that mouse primary fibroblast cells and L929 cell lines grown in the media added 0.05 mM CdCl₂ were reduced cellular density and cell form was the round and flow.</p> <p>From those results, it is thought to be suggested that the CdCl₂ for test has dose-dependent cytotoxicity. These results indicate that chitosan has cytotoxic preventive effect. The mouse primary fibroblast cells do not differentiate L929 cell lines in the cytotoxicity.</p>