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Breakage of λ-DNA by Inorganic Tin and Organotin Compounds as Environmental Pollutants

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λ-DNA (double-strand DNA) was incubated with inorganic tin(Ⅱ) and tin(Ⅳ) and five organotin compounds [n-butyltin trichloride, di(n-butyltin) dichloride, methyltin trichloride, dimethyltin dichloride and trimethyltin chloride] in reaction systems both with and without hydrogen peroxide (H_2O_2) content. The tin compounds tested in this study did not induce DNA breakage in the absence of hydrogen peroxide. Divalent inorganic tin ($SnCl_2$) and tetravalent inorganic tin ($SnCl_4$) caused DNA breakage in the presence of hydrogen peroxide. DNA breakage was not caused by n-butyltin compounds and methyltin compounds either in the presence or in the absence of hydrogen peroxide.

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Dose-Response Relationship between Total Cadmium Intake and Prevalence of Renal Dysfunction using General Linear Models.

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When total Cd intake corresponding to the mean prevalence of each abnormal urinary finding in the non-exposed subjects was calculated using general linear models, total Cd intakes corresponding to glucosuria, proteinuria, aminoaciduria (men only) and proteinuria with glucosuria were determined to be ca. 2.2-3.8 g and those corresponding to prevalence of metallothioneinuria were calculated as ca. 1.5-2.6 g. The low-molecular-weight protein in urine was confirmed to be a more sensitive indicator of renal dysfunction, and these total Cd intake values were close to those calculated previously by simple regression analysis, suggesting them to be reasonable values as the maximum allowable intake of Cd.

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Effects of Chinese Medicinal Plant Extracts on Mutagenicity of Trp-P-1

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Extracts of 29 traditional Chinese medicinal plants were tested for their modifying effects on the mutagenicity of 3-amino-1,4-dimethyl-5H-pyrido[4,3-b]indole (Trp-P-1) by the Ames assay. Aqueous extracts of *Xanthium sibricum* PATR. ex WIDD., *Cyathula officinalis* KUAN, *Polygonum cuspidatum* SIEB. et ZUCC., *Terminalia chebula* RETZ., *Zanthoxylum bungeanum* MAXIM., *Glycyrrhiza uralensis* FISCH., *Hydrocotyle sibthorpioides* LAM. and *Polygonum bistoria* L. strongly inhibited the mutagenicity of Trp-P-1. 60 % EtOH extracts of *G. uralensis* FISCH., *P. cuspidatum* SIEB. et ZUCC., *Aristolochia manushuriensis* KOM., *P. bistorta* L., *Lindera aggregata* (SIMS) KOSTERM and *Dioscorea bulbifera* L. also showed significant inhibitory activities in the same assay.