

[Wat. Sci. Tech., 26, 9-11 (1992)]

[Lab. of Public Health]

An estimation of safety of ozonation and chlorination of a water purification plant.

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We investigated the effect of ozonation and chlorination on the mutagenic activity of humic substances. SOS Chromotest was used for mutagenic test. The mutagenic activity decreased, but could not be removed perfectly. Glyoxal, which is known as the strong mutagenic compound produced by ozonation, was not decomposed at equal amounts of chlorine to the chlorine consumption, but decomposed to 10 % at 5 times. Also, granular activated carbon (GAC) filtration was performed, but it was not effective.

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[Lab. of Public Health]

Modulating effect of tanshinones on mutagenic activity of Trp-P-1 and benzo[a]pyrene in *Salmonella typhimurium*.

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The modulating effects of the Chinese medicinal plant 'Tan-shen', the radix of *Salvia miltiorrhiza* Bunge, on the mutagenic activities of Trp-P-1 and benzo[a]pyrene were investigated using *Salmonella typhimurium* TA98. Ether- and hot water-extracted 'Tan-shen' enhanced both mutagens at low concentrations, but suppressed them at high concentration. Extracts by ether treatment were more effective than those extracted by hot water. Dihydrotanshinone I, cryptotanshinone, tanshinone I, and tanshinone IIA were isolated from the ether extract by high performance liquid chromatography (HPLC) and were recognized to be the mutagenic modulators.

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[Lab. of Public Health]

The genotoxicity of organotin compounds in SOS Chromotest and rec-assay.

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The genotoxicity of various organotin compounds (butyltins, phenyltins, methyltins) and inorganic tin (SnCl_4), which are known to exist as the environmental pollutants, was investigated by SOS Chromotest and rec-assay. Mono-n-butyltin oxide, n-butyltin trichloride and di-n-butyltin dichloride showed high SOS-inducing potency in SOS Chromotest. Di-n-butyltin dichloride, tri-n-butyltin chloride, bis-(tri-n-butyltin)-oxide, dimethyltin dichloride and trimethyltin chloride were recognized as DNA-damagers on *B. subtilis* by rec-assay.