

Meeting abstract

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Hospital waste water: health risk for human and environment by cytostatic drug emissions? Part II: Biological monitoring (genotoxicity assays) and risk assessment

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Biological monitoring

Assays: (a) Bacterial mutagenicity (TA98, TA100), (b) single cell gel electrophoresis (SCGE; endpoint: DNA migration) with primary rat hepatocytes. *Waste water samples:* effluent of (a) the total hospital (TH), (b) the oncological ward (OW), collected before dilution in the Vienna sewer system.

Results

All samples negative in bacterial assays, acute bactericidal/bacteriostatic effects of highest water volumes tested. *SCGE assays:* increase but no significant differences between DNA migration caused by TH and OW samples. The genotoxic activities of the waters could be reduced significantly (25–50%) by waste water treatment.

Risk assessment

according to EU Guidelines aimed at elucidating priorities and urgencies for risk management. Integrating chemical and biological monitoring data, genotoxic profile and (sparse) data on aquatic toxicity revealed that the endangerment of humans, aquatic and terrestrial environment

by cytostatic drugs released via hospital waste water could be preliminary classified as small. A reduction of the avoidable environmental load – in line with EU document 2000/60/EC – could be achieved by advanced waste water treatment at the source as applied within the framework of this project.