指定様式３：英文要旨

A b s t r a c t

T i t l e	Analysis of micropollutants including unidentified compounds in water environments by the derivatization with pentafluorobenzyl bromide
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〔summary〕

A number of researches as to the pharmaceuticals and personal care products (PPCPs) have been carried out in water environments focusing on the removal in wastewater treatment plants and occurrences in environments. However the limitation can be suggested because the numbers of the target compounds in the researches are no more than 100 in most cases, though more than 3,000 pharmaceuticals are used in medical practices. The objective of this research is to analyze the compounds in environmental samples without previously identifying the compounds.

In the case of analysis of polar micropollutants by GC/MS, derivatization procedure is required to change the chemical structure of target compounds into volatile compounds. The derivatization by pentafluorobenzyl bromide (PFBBr) was used in this study to analyze selectively the target compounds. The samples taken at the Tama river and wastewater treatment plants were concentrated by solid phase extraction columns. After derivatization by PFBBr and the analysis by GC/MS, three chromatograms m/z: 77, 91, 181 were extracted and peaks were compared.

As many as 107 peaks were found for the sample taken at the Tama river; 254 peaks for the effluent of Tamagawa Jyoryu wastewater treatment plant; 225 peaks for the effluent of small scale wastewater treatment plant, while 202 peaks were found for the sample of effluent after advanced treatment by the activated carbon adsorption. As many as 100 peaks out of these peaks had the characteristics of PFBBr derivatization. More numbers of peaks were found for the effluents of wastewater treatment plants than for the river water sample. The areas of the peaks were decreased after the advanced treatment.

注１：英語要旨―３００ワード程度。