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PM276 Occurrence of Antibiotics and Antibiotic Resistant Bacteria in River Water from Japan.

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Antibiotic residues in environment have attracted much attention due to their potential to increase antibiotic resistance in microorganisms. Especially, the aquatic environment, which receives sewage and agricultural effluent, is considered to be an important field where spreading of antibiotic resistance occurs. Little information, however, is available on the levels of antibiotic residues and number of resistant bacteria in the environment. In this study, we measured antibiotics (tetracyclines, sulfonamids and tylosin) and antibiotic resistant *Escherichia coli* in Tama River and Tsurumi River that ran through urban and Kaname River in rural area. The concentrations of antibiotics were in ng/L level, and were higher in river water from agricultural area than from urban area. This may be due to the fact that larger amount of antibiotics is used for livestock animal than for human. Also, numbers of antibiotic resistant *E. coli* detected were greater in the agricultural area than in the urban area. The patterns of resistance against array of different antibiotics differed depending on the character of the rivers. The patterns of the antibiotic resistance observed in the agricultural area were similar to those observed for livestock animals reported by the Ministry of Agriculture, Forestry and Fisheries, Japan. And the patterns in the urban rivers were similar to those observed for human in hospitals reported by the Ministry of Health, Labor and Welfare. These results suggested that antibiotics and antibiotic resistant bacteria in the urban rivers and rural rivers were originated from human and from livestock animals, respectively. The relations between the level of antibiotic residues and the number of antibiotic resistant *E. coli*, however, could not be found. This may be because just a selection medium was used to isolate *E. coli*. To elucidate the relationship, further research on R plasmid by molecular biological method may be necessary.