Realization of a safe, secured, and comfortable town by removing a slight amount of hazardous substances hiding in living environments

Detection and control of spread of antibiotic resistant bacteria at municipal wastewater treatment plants

Project Leader : Toru WATANABE
Professor, Department of Food, Life and Environmental Sciences, Yamagata University

R&D Team : University of Miyazaki, Kanazawa University, Tohoku University

Summary :

This project aims to establish municipal wastewater treatment plants (WWTP) as a base for detection and control of spread of antibiotic resistant bacteria (ARB) in living environments, which are not easily identified by hospitals' surveillance, through the following studies:

1. Monitoring of ARB in urban sewage at a WWTP and development of system to share the monitoring data with hospitals.
2. Estimation of risk of infection with ARB released from WWTP using a newly developed QMRA-based methodology.
3. Proposal of wastewater treatment technologies (or its operational condition) which can reduce the risk effectively.