Geophysical Research Abstracts
Vol. 15, EGU2013-11407-1, 2013
EGU General Assembly 2013

Isolation and identification of *Salmonella* spp. in environmental water by molecular technology in Taiwan

Chun Wei Kuo (1), Kuan Hao Huang (1), Bing Mu Hsu (1), Hsien Lung Tsai (2), Shao Feng Tseng (1), Tsung Yu Shen (1), Po Min Kao (1), Shu Min Shen (1), and Jung Sheng Chen (3)

(1) National Chung Cheng University, Taiwan (khhuang1126@gmail.com), (2) Cheng Hsin General Hospital, Taiwan, (3) National Defense Medical Center, Taiwan

Salmonella spp. is one of the most important causal agents of waterborne diseases. The taxonomy of *Salmonella* is very complicated and its genus comprises more than 2,500 serotypes. The detection of *Salmonella* in environmental water samples by routines culture methods using selective media and characterization of suspicious colonies based on biochemical tests and serological assay are generally time consuming. To overcome this drawback, it is desirable to use effective method which provides a higher discrimination and more rapid identification about *Salmonella* in environmental water. The aim of this study is to investigate the occurrence of *Salmonella* using molecular technology and to identify the serovars of *Salmonella* isolates from 70 environmental water samples in Taiwan. The analytical procedures include membrane filtration, non-selective pre-enrichment, selective enrichment of Salmonella. After that, we isolated *Salmonella* strains by selective culture plates. Both selective enrichment and culture plates were detected by Polymerase Chain Reaction (PCR). Finally, the serovars of *Salmonella* were confirmed by using biochemical tests and serological assay. In this study, 15 water samples (21.4%) were identified as *Salmonella* by PCR. The positive water samples will further identify their serotypes by culture method. The presence of *Salmonella* in environmental water indicates the possibility of waterborne transmission in drinking watershed. Consequently, the authorities need to provide sufficient source protection and to maintain the system for disease prevention.

Keywords: *Salmonella* spp., serological assay, PCR