EXAMINATION OF DIARRHEAL STOOLS IN HAT YAI CITY, SOUTH THAILAND, FOR ESCHERICHIA COLI O157 AND OTHER DIARRHEAGENIC ESCHERICHIA COLI USING IMMUNOMAGNETIC SEPARATION AND PCR METHOD

Sineenart Kalnauwakul¹, Manthana Phengmak¹, Urairat Kongmuang¹, Yoshitsugu Nakaguchi² and Mitsuaki Nishibuchi²

¹Department of Pathology, Faculty of Medicine, Prince of Songkla University, Hat Yai, Thailand; ²Center for Southeast Asian Studies, Kyoto University, Yoshida, Kyoto, Japan

Abstract. A total of 493 stool samples from diarrheal patients in Songklanagarind Hospital, in southern Thailand, were examined for Escherichia coli O157 by the culture method combined with an immunomagnetic separation (IMS) technique. E. coli O157 was not found, although the IMS-based method could detect 10²-10³ CFU of artificially inoculated O157/g of stool samples. Polymerase chain reaction was also used for the detection and identification of diarrheagenic E. coli from 530 stool samples. The target genes were eae for enteropathogenic E. coli (EPEC), stx for enterohemorrhagic E. coli (EHEC), elt and est for enterotoxigenic E. coli (ETEC), ipaH for enteroinvasive E. coli (EIEC), and aggR for enteroaggregative E. coli (EAggEC). Fifty-eight diarrheagenic E. coli strains were detected in 55 stool samples (10%) from 32 children and 23 adults. These included 31 EAggEC strains (5.8%), 13 ETEC strains (2.5%), 13 EPEC strains (2.5%), and one EIEC strain (0.2%). EHEC was not detected. The diarrheagenic E. coli strains were found mainly in children under 2 years of age (24 of 32 children). EAggEC strains and ETEC strains were susceptible to several antibiotics whereas the EPEC strains exhibited resistance to these antibiotics.