

A b s t r a c t

T i t l e	The prevalence of CTX-M gene in the isolates of ESBL - producing <i>Escherichia coli</i> in the environment
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<p>[summary]</p> <p>The prevalence of antibiotic-resistant bacteria is not a recent phenomenon. The natural environment, as well as hospitals, has a role in the spread of the resistance by accumulating antibiotic-resistant genes. The resistance to cephalosporins is often associated with the CTX-M genes encoding extend spectrum β-lactamase(ESBL). In this study, the characteristics of ESBL producing <i>E. coli</i> strains, which were isolated with plates containing different concentrations of antibiotics, were investigated. The resistant spectrum and a group of CTX-M genes in the strains were also examined to clarify the difference between clinical isolates and environmental isolates. The ratio of CTX-resistant bacteria was calculated by the use of CROMagarECC, a selective medium for <i>E. coli</i>, with the addition of different concentrations of cefotaxime. Among the total <i>E. coli</i> strains isolated from the environment, the ratio of strains the ratio of strains which formed colonies on the plate containing CTX of 4μg/ml was 1.6-5.5%, while that on the plate containing CTX of 64μg/ml was 0.12-0.28%. The resistant ratio to fluoroquinolones was 65% among the isolates with the 4μgCTX/ml agar, while that among the isolates by the 64μgCTX/ml agar was 89%. More than 90% of the isolates were ESBL-producers regardless of the isolation method. The ratio of strains with CTX-M type gene to all of the examined strains with isolation by 64μgCTX/ml was higher than those for isolates with 4μgCTX/ml. The results on PCR showed that CTX-M-1 group was the major resistant gene among CTX-M type (<i>bla</i>CTX) gene, followed by CTX-M-9 group, CTX-M-2 group and other genetic type(possible CTX-M-8 groups). The threshold for the judgment of resistant bacteria was revised from 64μg/ml to 4μg/ml as to CTX by CLSI in 2012. The isolates obtained by the revised threshold had narrow resistant spectra to various antibiotics and smaller incidence of CTX-M type resistant gene.</p>	

注 1 : 英語要旨—300ワード程度。