

CTX-M EXTENDED-SPECTRUM β -LACTAMASES AMONG CLINICAL ISOLATES OF ENTEROBACTERIACEAE IN A THAI UNIVERSITY HOSPITAL

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Abstract. This study presents updates on molecular epidemiology of extended-spectrum β -lactamases (ESBLs) in clinical isolates of Enterobacteriaceae from Srinagarind Hospital, Khon Kaen University, Thailand. All isolates were screened for the presence of ESBL genes, *bla*_{TEM}, *bla*_{SHV}, *bla*_{VEB} and *bla*_{CTX-M}, using PCR followed by nucleotide sequence determination. The results revealed that β -lactamase genes among 48 isolates collected between 1998 and 1999 were *bla*_{SHV} (79%), *bla*_{CTX-M-9} (52%), *bla*_{TEM-1} (48%) and *bla*_{VEB} (33%), whereas those found in 52 isolates collected in 2003 were *bla*_{TEM-1} (79%), *bla*_{CTX-M-15} (44%), *bla*_{SHV} (36%), *bla*_{VEB} (36%), *bla*_{CTX-M-14} (11%) and *bla*_{CTX-M-9} (10%). In addition, 45 isolates carried at least two different ESBL genes. Using PCR, part of insertion sequence *ISEcp1* was found in the upstream regions of *bla*_{CTX-M-14} and *bla*_{CTX-M-15}. ERIC-PCR analysis revealed that most ESBL-producing isolates were of different strains. This is the first report of CTX-M-9, CTX-M-14 and CTX-M-15 β -lactamase genes in Enterobacteriaceae in Thailand.

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