

## **Effect of Subinhibitory Concentrations of Antimicrobial Agents (Quinolones and Macrolide) on the Production of Verotoxin by Enterohemorrhagic *Escherichia coli* O157:H7**

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In Japan, antimicrobial agent therapy for patients with diarrhea due to enterovirulent organisms including enterohemorrhagic *Escherichia coli* (EHEC) is common, and norfloxacin (NFLX), fosfomicin, and kanamycin are recommended for EHEC treatment by the Japanese Ministry of Health and Welfare. The aim of this study was to analyze the effects of antimicrobial agents which have been used or recommended for the treatment of EHEC on the production of verotoxin (VT) in vitro. Subinhibitory concentrations of quinolones, NFLX,

sparofloxacin (SPFX), and grepafloxacin (GPFX) markedly stimulated the productions of VT1 and VT2. The macrolide azithromycin (AZM), erythromycin (EM), and clarithromycin (CAM) did not stimulate the production of VT at a wide range of concentrations. These in vitro results indicate that when quinolones are prescribed for a patient infected with EHEC, the concentration of antimicrobial agents used in vivo and the susceptibility of the EHEC strains against quinolones should be taken into consideration.