DETECTION OF *ESCHERICHIA COLI* O157: H7 *VT* AND $_{RFB_{O157}}$ BY MULTIPLEX POLYMERASE CHAIN REACTION

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Abstract. A rapid method for detection of *Escherichia coli* O157: H7 using multiplex PCR was developed. Two oligonucleotide primer pairs were used for simultaneously detection of *vt* encoding verotoxin genes for virulence factor and rfb_{O157} encoding the O-antigen specific for *E. coli* O157: H7. Multiplex PCR generated two products of 215 bp and 420 bp for *vt* and rfb_{O157}, respectively. Multiplex PCR detected reference strain O157: H7 (NF-7777) with a sensitivity of 10^5 CFU per ml with no amplification of other 15 pathogenic bacteria. After incubation of 10^2 CFU/25 gram raw meat in tryptic soy broth at 37ºC for 8 hours, multiplex PCR conducted with the addition of 100 mg bovine serum albumin produced the two specific PCR products for *E. coli* O157: H7. This modified multiplex PCR is a rapid, sensitive, and specific technique for detecting and differentiating *E. coli* O157: H7 and has the potential to be used as an alternative to conventional methods for the screening of O157: H7 strains isolated from raw meat.