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Detection of *Vibrio vulnificus* by real-time PCR targeting *the rpoS* gene

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Vibrio vulnificus is a causative agent of serious food-borne diseases in humans resulting from the consumption of raw seafood. Several studies aimed at detecting *V. vulnificus* have targeted *vvh* as a representative virulence toxin gene belonging to the bacterium. In this study, we targeted the *rpoS* gene, a general stress regulator, to detect *V. vulnificus*. PCR specificity was identified by amplification of eight *V. vulnificus* templates and by the loss of a PCR product with 36 non-*V. vulnificus* strains. The PCR assay had a 273-bp fragment and a sensitivity of 5 ng DNA from *V. vulnificus*. SYBR Green I-based real-time PCR assay targeting the *rpoS* gene showed a melting temperature of approximately 84°C for *V. vulnificusstrains*. The minimum level of detection by real-time PCR was 2 pg of purified genomic DNA, or 10^3 *V. vulnificus* cells in 1 g of oyster tissue homogenate. These data indicate that real-time PCR is a sensitive, species-specific, and rapid method for detecting this bacterium using the *rpoS* gene in pure cultures and in oyster tissues

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Biotransformation of Korean Panax *ginseng* by Pectinex

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Ginsenosides comprise the major component of ginseng exhibit various types of biological activity, including antiinflammatory and antitumor effects. In these pharmacological actions, it is thought that these activities are carried out by the metabolites of ginsenosides metabolized by human intestinal microflora. It has also been reported that their clinical efficacy varies with the hydrolyzing potential of the components of the intestinal microflora. We tried to develop a process for metabolizing ginsenosides to compound K using food-gradeenzymes, which can be used commercially. Among these, Pectinex proved to be the most effective mediator of the catabolism of ginsenosides to compound K. The optimal conditions for this biotransformation were determined to be as follows: 10% to 15% rootlet ginseng, pH 5, 500C, and 2 to 3 days of incubation, to yield 20.0 ㎎ of compound K/g of rootlet ginseng. We suggest that the metabolism of ginseng to compound K in the presence of Pectinex has many advantages over previous methods, in respects of use of raw, non-extracted rootlet ginseng, which do not require more organic solvents and evaporation apparatus.Potential metabolites PG1, PG2, PG3, and PG4 were detected in Pectinex-treated rootlet ginseng using by TLC and HPLC and, among them, PG4 was identified as compound K by TLC, HPLC, and MS. Additional studies will be carried out to determine the structure of these metabolites of ginseng and to understand the relationship between their structures and activities.