

Cloning and Characterization of *O*-methyltransferase from *Bacillus cereus*

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Flavonoids are phytochemicals found in nature. Antioxidant and estrogenic activity are typical biological function of flavonoids¹⁾. Biological modifications of flavonoid structure have been important due to conferring regiospecificity to natural compounds. Flavonoids could undergo hydroxylation, glycosylation, and methylation. Among these, *O*-methylation of flavonoids have an effect on the solubility and thus on the antimicrobial activity of the flavonoids²⁾. BcOMT-1, methyltransferase from *Bacillus cereus* was cloned to study the biological modification reaction of flavonoids. It consisted of 635 bp ORF. BcOMT-1 was subcloned into *E. coli* expression vector pET-15b with His-tag expression system. *E. coli* transformant containing BcOMT-1 was used for biotransformation of flavonoids such as quercetin, taxifolin, eriodictyol, luteolin, naringenin, and keampferol. The reaction products were analyzed by thin layer chromatography and HPLC. BcOMT-1 produced two reaction products that were modified at either 3' or 4' hydroxyl group.

References

1. Bohm, B. A., 1998. Introduction to Flavones. Chemistry and Biochemistry of Natural Products Series, Vol. 2. Harwood Academic Publishers, Amsterdam.
2. Joshi, C. P., Chiang, V. L., 1998. Conserved sequence motifs in plant *S*-adenosyl-L-methionine-dependent methyltransferases. *Plant Mol. Biol.* 37, 663-674.